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ABSTRACT

Adult educators in the state of New Jersey have expressed concern about the adequacy of the 1978 General Educational Development (GED) test. Based on these concerns research was conducted in the use and applicability of the current GED test. The project investigated whether the existing GED test was meeting the needs of the large majority of GED candidates, whether it was validly assessing the types of skills and knowledge that were most important to various consumers of GED test results, and whether there was a market for an alternative test that would be based on a different rationale. Discussion and information gathering within the educational community and in the business community revealed that the GED does not serve all purposes and that an alternative test would be acceptable if it were sanctioned by the state of New Jersey. In addition, researchers compiled a list of specifications for an alternative test. As outlined in this report, the technical specifications cover general design factors and four subtests: reading proficiency, mathematics, writing, and applied problem solving. For each of the subtests, the report addresses common problems, problems with the GED test in that field, basic design characteristics for a valid test of adult proficiency, and other technical specifications. A bibliography concludes the report. Appendixes include: interview guides for GED students, employers, principals, and teachers; the ABE/GED staff survey questionnaire; vocational-technical and higher education admissions policies survey questionnaires; subtest samples; and the primary trait scoring guide. (KC)

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Research Monograph Number 5

Center for Adult Development
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1981

TOWARD A RATIONALE AND TECHNICAL SPECIFICATIONS FOR AN ADULT HIGH SCHOOL EQUIVALENCY EXAM

By

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SECONDARY LEVEL ADULT PROFICIENCY PROJECT

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PART I

PROJECT OVERVIEW AND PURPOSE

Historical Background

At the end of World War II the military and the educational communities were faced with a problem. Many servicemen who had voluntarily left high school to fight in the war were handicapped by the lack of a diploma. It was assumed that, for many of these men, the education they received before the war, coupled with their military experience, led to a level of "general educational development" equal or superior to that of adolescent students completing high school. Rather than force these men to return to high school, the American Council on Education, working with the military, developed the GED testing program. The servicemen could earn a certificate of high school equivalency by taking a ten-hour test of Literature, Social Studies, Science, Mathematics, and correctness and effectiveness of expression.

The GED program was eventually extended to the civilian population, where it continues to exist as the primary means for adults to earn a high school diploma. Since 1968, over 200,000 adults in New Jersey have earned their High School Equivalency Diploma through GED, and in 1981 one out of every five high school diplomas awarded in New Jersey was earned by an adult who passed the GED examination. In Fiscal Year 1981 alone, 33,000 adults enrolled in GED preparation programs and 31,322 adults took the GED test of whom 19,758 earned their diploma. (Bureau of Adult and Continuing Education Statistics)

In 1973 the American Council on Education initiated a project to revise the existing GED test of high school equivalency. The major concerns which led to this revision were (1) an interest in shortening the required testing time in order to reduce costs and hardships on examinees, and (2) an interest in updating the content to make it more suitable to the GED population. Many people felt that the test was too academic and rigorous and not sufficiently applied or practical. The current edition of the GED, which was released in 1978, shortened test time from ten to six hours and included more items of an applied nature than did the previous test. The format of the new test remained basically unchanged, consisting of five subtests based primarily on the content of a liberal arts, college preparatory curriculum. However, the reading requirement was significantly reduced by shortening passage lengths and introducing discrete knowledge items in the science and social science subtests. These discrete items account for 30% of the total number of items in these sections.

Adult educators in the state of New Jersey have expressed concerns about the new GED since it first came into use. The following points were raised in correspondence received by the Bureau of Adult, Community, Continuing Education over the last three years:

(1) The new test does not adequately improve on its original shortcoming of being too academically oriented. Test items measure skills and knowledge of little relevance to adult competence.

(2) While many items are themselves difficult, the percentage of correct responses required to pass the test is low. This too tends to reward guessing and makes some subtests easy at the passing level.

(3) The test does not stress realistic application of transferable communication and computation skills.

(4) The reliance on discrete items requiring recall of specific facts provides inappropriate goals for adult instruction and detracts from teaching transferable skills. Many discrete items are problematical, having more than one possible correct answer, and it is felt that the discrete items may be more easily compromised.

Purpose of Study

Based on these concerns, the New Jersey Department of Education contracted with the Rutgers University Center for Adult Development to conduct "research into the use and applicability of the current GED test, including recommendations for the development of a test for New Jersey." The research project focused on two major outcomes: (1) An examination of public policy issues related to the award of high school diplomas to adults and (2) the design of a set of technical specifications for a test of high school equivalency, based on skills, knowledge, and standards of performance identified as appropriate by the public.

It should be noted at the outset that we had no authority nor any desire to modify the existing GED test. Nor did we see any real advantage in attempting to design an improved version of the current GED test for the state of New Jersey. While some of the concerns expressed by adult educators dealt with the technical aspects of the test, a more basic concern suggested a need to review the fundamental rationale behind the test and its appropriateness for many candidates in the target population. We set out to investigate whether the existing GED test was meeting the needs of the large majority of GED candidates, whether it was validly assessing the types of skills and knowledge that were most important to various consumers of GED test results, and whether there was a market for an alternative test which would be based on a different rationale.

Methods

The research methods employed in the rationale section of this study were designed to support the decision-making process. In many respects these methods of research differ from those employed in basic academic or scientific research. Whereas scientific research attempts to describe or explain phenomena by isolating specific variables in the environment, the research method for decision making is designed to gather information relevant to the following steps in the decision-making process:

(1) Information required to define the problem or issue.

(2) Information required to analyze difficulties with the existing situation.

(3) Information necessary to establish appropriate criteria for a sound decision.

(4) Information on possible alternatives and their relative merits.

(5) Information necessary to implement the decision.

This method places greater emphasis on gathering all relevant information than in establishing the rigorous procedures required to insure reliability and validity of the data employed in most scientific research projects.

However, in the investigation of technical aspects of testing, we employed techniques common to scientific investigation such as factor analysis of test scores and multiple regression techniques to examine questions of bias. We also examined technical reports and research results to gather information on relative merits of various test designs and techniques. In the final analysis, however, our recommendations are based on informed judgements rather than scientific determinations. While we can offer empirical evidence and logic to support our recommendations, the nature of this investigation does not allow us to assert that we can "prove" anything in a scientific sense.

This reservation is true of the entire investigation, but it is particularly true in our study of public attitudes toward the GED test and the award of high school diplomas to adults. While we may want to objectively determine appropriate standards for awarding high school diplomas, this is an impossible task whether we are talking about normal school aged students or adults. The establishment of standards or criteria of performance is always a subjective process. The decision to award or not award diplomas for various activities or proficiency levels is a matter of public policy. The best that we can do is to recommend coherent policy based on systematically developed data rather than on the basis of tradition or arbitrary value systems. Therefore we directed our attention to a detailed investigation of existing public policies and the logical base, if any, for those policies. We also investigated public attitudes toward high school equivalency testing, the instructional implications of the testing requirements, and beliefs about what should or should not be tested. From this investigation we were able to identify strengths and weaknesses of the existing process and to make some predictions about the demand for an alternative test.

The entire investigation was conducted along two parallel and coordinated tracks. One track employed market research techniques to assess "relevant public" attitudes toward high school equivalency testing. Its general purpose was to develop a rationale for an alternative test. The second track investigated various techniques and procedures for testing skills and knowledge identified as important in the rationale. The goal of this track was to develop a set of technical specifications for the alternative test.

The specific methods used in each of these research tracks are described in greater detail in subsequent sections.

PART II

RATIONALE FOR AN ALTERNATIVE TEST

Section 1

INTRODUCTION

Any rationale for developing a new test of high school equivalency must be based on a recognized need. In our preliminary analysis of the issue, we identified three basic perspectives on the need for, or desirability of, designing a new test.

Conservation Position. Persons identified with this position tended to see no real problems with the existing GED testing program. They generally opposed any effort to develop an alternative test based on the fear or belief that a new test would lack credibility with colleges, employers, and educators from other states. This group placed a great deal of value on the fact that the GED test was standardized and that this standardization lent a concrete value to the high school credential, and they were reluctant to risk sacrificing the credibility of an established credential.

Revisionist Position. This group was favorably disposed toward the general philosophy and procedures of the existing GED test, but proposed modification of certain undesirable technical aspects of the test. The two aspects of the test most commonly criticized by this group were the discrete items in the social studies and science tests and the atomistic approach to assessing writing skills. The courses of action proposed by this group included either modification of the existing GED test or development of a similar but improved version by the state of New Jersey to replace the existing GED.

Alternative Test Position. This group found fault with the academic orientation of the current GED test as a goal of instruction for many adult students. They tended to characterize the existing GED as too academic and not relevant to the needs of the adult GED population. This group generally favored the design of a test oriented toward measuring proficiencies that were relevant to adult roles. This group would prefer to select test items based on their relationships to adult living requirements rather than their relationship to high school subject matter. This position would require the development of an alternative test which would differ radically from the GED in many important respects.

Our survey and interview research, described fully in subsequent sections, aimed at gathering information and evidence to support a rational choice from among these alternatives. Evidence required to support the conservative position would be the absence of a reasonable demand for change in existing practices. Our research indicated that substantial demand does exist for an alternative test, and that a state-endorsed credential would be widely accepted. Therefore, we concluded that the evidence does not support the major arguments cited for maintaining the status quo.

The decision to develop a second test of high school equivalence based on the same rationale as the existing GED (Position #2) would be warranted only if there were substantial technical deficiencies in the current GED test. The expenditures required to develop and administer a second test of a similar nature could only be justified if there would be a significant improvement in reliability or validity, or reduction in bias due to improved test design or construction. We conducted a technical evaluation of the GED to explore the potential for improvement in basic design and construction. While we did note some areas of concern that could be addressed in normal revisions, we concluded that the GED was a fairly well constructed test, comparable to many school achievement tests designed for similar purposes. Therefore we could not justify this position either.

The major justification for developing an alternative test of high school equivalency lies in the finding that the existing test does not address the educational needs of a substantial segment of the target population. It does not provide suitable educational goals for a number of people currently involved in high school equivalency instruction. To a limited extent, this concern was addressed in the recent revision of the GED. An attempt was made to introduce real-life reading tasks into the test which had previously been almost entirely liberal arts in nature. (GED Testing Service, 1977) We found, however, that the test is still perceived as overly academic and not well suited to the needs of many clients. We believe that this problem would be alleviated by introducing an alternative test designed to meet a different set of needs than those addressed by the GED. A test of this nature would not be directly competing with the GED for the same pool of candidates but would, instead, expand the existing pool by addressing a set of previously unmet requirements. The result would be an increase in the total number of adults studying for and receiving a high school diploma through a testing option.

The following sections describe the information and research data that contributed to our conclusions.

Evolving Problems With The GED Test

According to E. F. Lindquist, a member of the founding committee of the GED, the test was originally designed to measure:

> the extent to which all past educational experiences of the individual tested have contributed to his general educational development, or to his ability to carry on successfully in a program of general education of the type which the first two years of the liberal arts college aim to provide. (American College Testing Program, 1974, p. 2-3)

While this philosophy recognizes that all of life is an educational experience, it is obvious that the learning which was considered most relevant was that which could be directly equated to the instructional outcomes of the core liberal arts curriculum of English, social studies, natural science, and mathematics. This perspective is seen in the arrangement of subtests within the GED test. The original GED test was clearly an academic achievement test, with its validity highly dependent upon the degree to which the items in the test adequately reflected the core content of this liberal arts curriculum. The uniqueness of the GED was not in its content, but in its realization that these educational outcomes could be attained outside of the normal classroom. It broke from the tradition of awarding diplomas only on the basis of time spent in the classroom.

At the time of its original development, the content of the GED probably reflected the curriculum of most high schools. A high school education was a goal achieved by less than half of the high school aged persons of that era. The diploma was a stepping stone to college, and the GED test helped large numbers of servicemen gain entrance to college and take advantage of their GI Bill benefits. By the 1970's, however, the liberal arts orientation of the GED was much less representative of the outcomes of a high school education. In calling for a revision of the GED, the Conference of State Administrators of the GED Testing Program of 1973 voiced concerns that the content was not suitable for the existing GED population and that the materials were unnecessarily academic and rigorous and not sufficiently applied or practical. (American College Testing Program, 1974, p. 2-11)

The subsequent revision of the test, introducted in 1978, included a sampling of items assessing real-life reading skills (approximately 50 percent of one subtest), but the essential nature of the GED remained the same. It would have been difficult for the GED Testing Service to have introduced a radically altered version of the GED without risking a loss of credibility. Consequently the current GED retains the same basic design characteristics and philosophy of the old GED, and it still relies primarily on its perceived relationship to the high school curriculum for validity. The dilemma faced by the test developers was expressed in the proposal submitted by ETS.

> The GED tests therefore must serve two purposes which tend to oppose one another: they must discriminate between GED candidates at a minimum performance level for obtaining the high school diploma, and they must be valid measures of the 'long-term objectives...of a...high school education.' To the extent either of these objectives is served, the other may be less well served. It will be important to strike a reasonable balance between them in the development of the new GED tests. (GED Testing Service, 1977, p. 2)

The ETS response to this dilemma was to include a greater number of items at a lower level of difficulty while retaining sufficient items at a higher level of difficulty to ensure its validity as a broad range measure of high school equivalency. (GED Testing Service, 1977, p. 2) Note that this strategy did not depart significantly from the policy of using the content of a traditional liberal arts high school curriculum as a basis for item selection.

From our interviews and surveys, described in detail in later sections, we concluded that this attempt to compromise between the pragmatic interests of much of the GED target population and the traditional concern for academic content validity has not achieved the desired results. The test does not adequately measure proficiency in real-world adult roles, but continues to be a relatively good measure of academic achievement. As the test developers at ETS noted, it is difficult to validly measure either of these constructs without reducing the validity of the instrument as a measure of the other.

The Changing Value and Meaning of a High School Diploma

Like most commodities, the value of the diploma is subject to the economic law of supply and demand. At the turn of the century, the diploma was a scarce commodity achieved by approximately ten percent of the adult population; as such it was considered a certificate of exceptional academic accomplishment aimed primarily at an elite group of students who were going to college. Few employers expected or required a high school diploma as a prerequisite for employment.

From 1900 to 1960 the rate of high school completion increased at a rate of approximately one percent each year leveling off in 1960 at just under eighty percent. (Hunter and Harmon, 1980) As more and more people enter adulthood with a high school diploma, it has become the expected minimum level of educational attainment in this society. It is no longer just a stepping stone to a college education. It has become a de facto certificate of adult proficiency. For example, the State requires a high school diploma for licensing practical nurses and cosmetologists. While the Supreme Court decision in the Griggs vs. Duke Power case prohibited the invalid use of high school diplomas as a screening device, many small businesses and training programs still require the diploma for training, initial employment in some positions, or for promotions.

The federal government has established the high school diploma as an important goal for all adults through various policy decisions and legislation. The 1970 amendments to the Adult Education Act expanded funding of basic education from 8th grade level to completion of high school. In so doing, Congress, in effect, established the high school diploma as a desired level of educational attainment for all adults and recognized that the lack of a high school diploma constitutes a serious barrier to gainful employment and full participation in many facets of adult life. In its recruiting and promotion policies, the military recognizes the high school diploma or its equivalent as a desirable or necessary requirement to demonstrating once again that the government considers high school completion a desirable goal for all adults.

Paralleling the increase in high school completion rates has been a diversification of the high school curriculum. In recent years, educators have come to recognize that different people want and need different kinds of education at the secondary level. Most public high schools now offer various "tracks" to a diploma. Programs in vocational-technical education, business education, or general studies have proven to be more acceptable and appropriate for many students than the traditional academic, or college prep curriculum.

These changes reflect a major shift in the value and meaning of the high school credential for the current generation of young adults. The skills and knowledge that it represents are not adequately reflected in the narrow range of liberal arts subject matter that constitutes the major emphasis of the GED test. Validation of the credential can no longer be confined to its relationship to success in postsecondary educational programs. In developing credentialing programs for adults to parallel those of the existing high school programs, we must consider all the uses that are made of the diploma in adult life.

A need still exists for a credential of general educational development which indicates potential for further academic study. This need is served by the existing GED test. The GED test may also be a relevant test for jobs which require skills that are largely academic in nature. For many adults, however, the high school credential is required or desired to certify proficiency in the basic skills needed for adult life outside of an academically-oriented context. The GED test is less useful for this purpose. Therefore a potential need exists for an alternative form of testing for high school equivalency which better addresses the needs of this population.

PART II

Section 2

RESEARCH ON PUBLIC ATTITUDES

As outlined previously, recent changes in the GED, coupled with the long term changes in the meaning of a high school diploma, have raised questions as to whether the current GED test adequately addresses the needs of adult non-high school graduates; whether it provides an appropriate set of objectives for adult basic education instruction; and whether it validly measures proficiencies important for non-college bound adults functioning as workers, citizens, and family decision-makers. We noted that the decision to award a high school diploma is a matter of public policy. While the public has always had a legitimate interest and has been involved in the establishment of standards for the award of high school diplomas, the major responsibility for interpreting legislated guidelines and setting standards has primarily been left to professional educators. Recently, however, other public groups have assumed a more active role in establishing criteria for high school graduation.

Recognizing the need for, and appropriateness of, including input from legitimate interest groups, we set out to identify "publics" that would most likely be able to provide us with information needed to clarify and examine the problems related to equivalency testing and high school completion for adults. The criteria we used for selecting these groups are outlined in a model for "shared decision making" by Hoy and Miskel (1978). They identified these criteria as relevance and expertise: those who have greatest interest in the decision, and those who are capable of making meaningful contributions. One of the objectives of our study was to identify the appropriate interest groups: (1) those people and organizations most affected by the award of high school diplomas (relevance) and (2) those people and organizations most knowledgeable about high school completion for adults (expertise).

With the assistance of the Bureau of Adult, Continuing and Community Education, an Advisory Committee was organized to represent the various relevant publics: Private industry, CETA, social services, labor unions, community colleges, vocational-technical schools, secondary schools, school boards, GED instructors, and the GED Testing Service. This committee worked with us to (1) identify issues related to the award of equivalency diplomas and (2) identify groups which could provide us with the information necessary to clarify issues and provide answers to questions about these issues. Based on input from previous research and recommendations of our advisory group, interviews were conducted with the following groups: GED students; adult education teachers, counselors, and administrators; personnel managers from business and industry; secondary school principals; and admissions officers for post-secondary institutions.

Initial Interviews

Structured interviews were conducted with small samples of all relevant publics to identify major attitude concerns about 1) the existing GED test, 2) the desirability of offering a different test option, and 3) the desirable characteristics of an alternative test. Results of these interviews were used to develop formal survey instruments.

In analyzing data from the initial interviews, the criteria of relevance and interest were again applied to determine whether or not to question each of these publics more closely. Based on our interview results we decided not to further survey employers and secondary school principals. In addition, we were prevented from conducting extensive surveys of GED students because of a desire on the part of the Bureau to preserve the privacy of this group. The results of our initial interviews are summarized below. (Copies of the interview guides and survey questionnaires are included in the Appendices B, C, E, and F.)

GED Students. The group most directly affected by the award of equivalency diplomas are those who work for and receive them. We felt it was important to talk with GED students to find out how their expectations of acquiring an equivalency certificate compare with the expectations of those who make decisions about equivalency program graduates, namely employers and post-secondary school offficials. We also wanted to find out which sections of the GED test presented the greatest problems for test takers.

The students we talked with had recently taken either the GED test or the Official GED Practice Test. Problems they encountered while taking the tests are revealed in their comments:

> "Give (students) more time--some people know the material, but they're slow."
>
> "Should do away with the science section, or only give things that people can use in their everyday life."
>
> "They (the test writers) asked us about science things I didn't know--like ph's, history dates, and facts I didn't know either."

In preparing for the GED the students felt the most useful things they learned were reading and math, while social studies, in particular history, and sciences were the least useful things they learned. Students were divided on the issue of which is more important, the diploma or the learning that takes place while working for the certificate. At least half felt that having a diploma was more important for success in life. Moreover, almost all the students interviewed felt high school graduates are treated differently than non-graduates. This group of students felt that there are no real differences between regular high school graduates and GED graduates. One student made the comment that "GED people know more because you study more. In high school there are no final exams, just seat time."

As was noted previously, we were unable to survey a large number of students. But we did use the information gathered during student interviews to develop our questions and survey plans for the other groups.

Business & Industry. Personnel managers from large and small companies, employment agency representatives, and CETA directors were consulted about their hiring and placement practices. The interviews specifically asked about entry-level jobs, educational requirements, and performance of equivalency certificate graduates. In general, those interviewed felt that there are no real differences between job applicants or employees with GED diplomas as opposed to those possessing a traditional high school diploma. Some even suggested that GED graduates "work harder." Those interviewed indicated that high school graduates have an advantage over non-graduates in terms of selection and promotion, especially institutions where all other factors are equal among the candidates. In fact, it was noted that many job and training opportunities require a high schol diploma although previous experience, attitudes, and aptitude may be taken into account. One major New Jersey firm reported that it no longer asks to see a person's educational credentials for entry-level positions.

When asked if they would accept an equivalency diploma based on the demonstration of practical and applied skills and knowledge rather than academic achievement, most of this group said they would. In fact, these representatives of the private sector generally agreed that the main criteria for accepting any equivalency diploma is that the State of New Jersey approves it. This group showed little concern for or knowledge of the technical aspects of testing or the nature of test content.

Secondary School Principals. Nearly 25% of those persons who take the GED nationally are under the age of 19. (Mazilio and Whitney, 1980, p. 20) This has serious implications for the administration of secondary schools. Many of these students have failed to meet graduation requirements at the end of their senior year. In order to graduate with their class, they take the GED. It has been suggested, however, that some students are "encouraged" by high school personnel to take the GED so they will leave school early. Our interviews with GED teachers suggested this testing-out option appears to be more closely associated with disciplinary problems than academic achievment.

These issues were raised in interviews with secondary school principals. They reported that students make the decision to take the GED with the aide of the guidance counselor. Students who fall into this category tend to be dissatisfied with school, are not doing well academically and/or socially, and have not found "their place" within one of the programs offered by the school.

None of the principals thought that having a testing-out option would have any effect on student attitudes and persistence. They were more concerned that the state minimum basic skills requirements now in effect would have a greater influence on the number of students who do not graduate in the traditional manner. The characteristics these principals associated with dropouts are lack of adjustment to high school, lack of motivation, and uncertainty about their goals.

These principals saw important changes taking place in the high school curriculum in terms of life skills, but noted that there is still insufficient communication between the school and the world of work. All indicated that school programs should address the educational needs of the communities in which they are located. They felt the most important skills for any high school graduate to possess were simply reading, math, and writing skills.

Adult Educators. GED program personnel are, as we expected, the best informed about problems in preparing students to take the GED and administering high school completion programs in general. They posess first-hand information about students' needs and concerns. For this reason we felt it was important to obtain reactions and comments from a broader representation of professionals in the field.

Comments generated in initial interviews with teachers indicated that they felt the current GED test does not place enough emphasis on adult roles in daily life. Second, some teachers felt the time limits on the test presented a problem for their students. (As was cited previously, the GED Testing Service has recently modified the time requirements to address this concern.) Third, the teachers stressed that "equivalency" should mean an "equivalent but different curriculum."

In addition to these interviews conducted by the project staff, written comments were solicited from all ABE/GED personnel with the aid of the Bureau. The Director of High School Completion distributed letters (Appendix A) throughout the state to public school adult educators explaining the project and requesting their input. The resulting comments focused on three aspects of the GED test: (1) the academic nature of the exam is not appropriate for many of their students, (2) the absence of actual writing makes it difficult to assess writing ability, and (3) it is difficult to prepare students to correctly answer discrete item questions.

Survey of Adult Educators

The interviews and letters, supplemented with information provided by the policy and technical literature, were used to construct a survey questionnaire (Appendix C) which was administered to teachers, counselors, and administrators of GED and high school completion programs. There was no attempt made to randomly sample the population of public school adult educators. Our goal was to solicit the informed opinions of as many of this group as we could. Over 600 questionnaires along with materials describing this project were distributed with the aid of the state's four adult education resource centers. This was done primarily through regularly scheduled teacher workshops. Those receiving the questionnaires were requested to read the descriptive materials before responding to the survey questions.

The Respondents. One hundred sixty-four adult educators completed and returned the quesionnaires with comments. A complete listing of comments is included as Appendix D of this report. The respondents identified their primary roles in adult education as teachers/facilitators (74%), administrators (15%), counselors (9%), and others (2%).

The respondents were fairly evenly distributed among the three regions of New Jersey: North--33%, Central--39%, and South--28%. The average length of time this group had been involved in ABE/GED instruction was 5 years. However, the majority of respondents (38%) had been working in the field for 2 years or less. The actual range of years of work experience represented was 1 to 18.

Seventy-nine percent of the respondents had read or studied the GED Practice Test published by the GED Testing Service. (In our dissemination workshops, however, we often encountered teachers who were not aware that an official practice test exists or is available for use.) Ninety-one percent of the respondents reported they were familiar with the content of the GED Test. In the workshops and interviews adult educators indicated this familiarity has been acquired through the use of commercially produced GED preparation materials such as those published by Cambridge and Regents.

Although informational material on the proposed alternative test was distributed with the questionnaires, and respondents were requested to read the materials prior to completing the questionnaire, only 60% of the respondents indicated they received any information about the proposed alternative. It should be noted, however, that the responses of those who had read the literature on the proposed alternative did not differ significantly from the responses of those who had not read the descriptive literature.

Before examining the survey responses, it is important to reconsider how the questionnaire was developed. The main body of the questionnaire was designed to address issues and concerns raised by adult educators, other relevant publics, and our advisory committee. Questions were written to address specific comments from these groups as well as to generate additional information and concerns not expressed prior to this time. The survey was organized around three reoccuring themes: (1) the desirability and acceptability of a new testing option for high school completion, (2) desirable features of an alternative test to guide test design, and (3) suggestions for item types, content, and format of such a test. Note that provision was made to include qualifying comments or statements for each item of the survey. These comments when obtained were used to provide a qualitative interpretation of the responses.

Except where noted there were no signficant differences in responses due to geographical location or type of position held.

Responses to Part A: Desirability of an Alternative Test. Throughout the term of this project we emphasized that the proposed alternative would not replace the GED, but would be offered as an option to students. Keeping that in mind, we examined the question of the desirability of a second test, an alternative test of high school equivalency.

Only thirty-two percent of those adult educators responding to our survey believe the GED test meets the needs of all or nearly all adults who want to complete a high school diploma through a testing option. In addition, many of those who responded positively to this question qualified their response with a comment indicating a desire for more emphasis on applied topics. The favorable comments suggested that the GED met students' needs because it provided them with a diploma.

The comments of those who responded "no" to this question (68%) tended to be more critical of the GED. The most frequent comment was that the test is too academically oriented for the students they usually serve. These respondents wanted to see actual writing, and were concerned that many of the questions are dependent on prior knowledge which cannot be taught without a great deal of time and effort, thus negating one of the advantages of a testing option. Several respondents suggested that more emphasis should be placed on real-life problems.

Nearly 47% of the respondents indicated the content of the current GED provides appropriate goals for basic skills instruction (Question No. 2). No qualifying or supporting comments were obtained from this group. Of the 53.1% that responded "no" to item 2, the comment most often given was that the GED lacks relevance, or that it is not an appropriate curriculum for many students served in their programs. An examination of the comments submitted in response to this question indicated that there may have been some confusion or difference of opinion as to the meaning of "appropriate goals." Therefore, we are somewhat uncertain of our interpretation of the response to this item.

A clear majority of respondents (82.6%) believe there would be a reasonable demand for a second (alternative) test of high school equivalency based on skills and knowledge required in adult life. This group repeatedly commented that alternatives are especially important for the non-college-bound group of adults seeking a high school diploma (Over 70% of the GED graduates). The most frequent comment voiced by those responding "no" to this question was a concern that students would be confused if they had to make a choice between two tests.

In line with the above, a follow-up question asked if it would be appropriate for the state of New Jersey to have its own test of high school equivalency. Seventy-five percent felt it would be appropriate Respondents once again stressed the need to offer alternatives, especially if the alternative addresses the special educational needs of New Jersey. Acceptability by post-secondary institutions, employers, and other states was a qualification expressed by many of the respondents. Among the 25.2% responding "no" there was an expressed concern about "national norms," with several respondents indicating there should be a standardization of the test throughout the 50 states.

Ninety-three percent of both teachers and counselors thought that an alternative test would be desirable from a student's perspective, while only 73% of the administrators agreed. Negative comments from administrators suggested teachers and counselors, as well as students would be confused by another option, an opinion apparently not shared by the groups in question. In addition, several respondents were concerned that if two tests were to be offered, the credibility of both tests would be questioned. Favorable comments noted that another option would allow for differences in interests and goals among adult students. Several noted that teachers and counselors would be better able to do their jobs if they could offer more choices to students.

All three groups were in general agreement that a second option would be desirable from a teacher's perspective (88% of the teachers, 85% of the counselors, and 70% of the administrators with no statistically significant differences among groups). Most respondents also found the alternative test desirable from their own perspectives.

In summary, the overwhelming majority of respondents indicated that a second test option would be desirable in New Jersey.

Responses to Part B: Basic Design Factors. Respondents were told to assume that a second test would be developed and asked what features they would like in a second test. Almost 86% felt the alternative test should be more adult-oriented than the GED and 91.6% thought a second test should place more emphasis on transferable skills such as reading, writing, and math. Several adult educators responded that an equivalency test should test what an adult high school graduate needs to know. Others expanded on this idea with their remarks that education is meant to prepare students to function as adults, so we need an adult-world option. Those in favor of a second test think more emphasis should be placed on transferable, practical skills and less on acquiring discrete knowledge learned only in an effort to pass the GED.

The 66.9% who think a second test should be criterion-referenced felt this type of test design gave the student and the educator a clear understanding of what level of performance is expected and what the student's score really means. The negative comments expressed a concern for standards of achievement and acceptance by the public.

The potential for providing diagnostic information received the greatest support from respondents. Ninety-four percent felt this feature would help teachers, counselors, and students plan realistically for skills preparation and remediation. The current GED was not designed to provide diagnostic information and is not suitable for that purpose in its present form.

Many respondents to the questionnaire indicated a general lack of understanding of the criteria of ecological validity although this information was contained in the information packets and discussed in the dissemination workshops. One third of the survey respondents did not answer this item although 54.9% indicated they agreed the criteria are appropriate. The main comment was quite simply, "This needs clarification. I need more information."

In Summary, the respondents favored a test which is: (1) adult-oriented; (2) tests basic skills of reading, writing, and math; (3) is criterion-referenced; (4) provides diagnostic information; and (5) meets the criteria of ecological validity.

Responses to Part C: Content and Format. The proposed alternative is divided into four subtests: reading ability, math ability, writing ability, and applied problem solving. Over 88% of the respondents found this format suitable, provided it is not strictly an academic skills tests. Eighty-five percent supported the idea that the writing subtest should require actual writing of short passages, such as found in forms, business letters, and notes. Several respondents commented that writing is very important. A concern for scoring procedures became apparent when the adult educators were asked if they thought the writing subtest could be administered locally. While 58.3% felt that the writing test could be locally offered, concerns expressed by many respondents focused on fair scoring practices and costs.

Ninety percent responded that reading passages for the tests should be drawn from materials published for general adult public consumption such as popular magazines, government publications, and local newspapers.

Summary of Adult Education Survey

Quite clearly New Jersey's adult educators perceive a need for, and are open to, a second equivalency testing option. They are favorably disposed toward the content and format suggested by this project as an alternative to the GED.

An issue identified by the survey comments was whether the credential would be acceptable by post-secondary institutions and business concerns in New Jersey and other states. Apparently, some of the support for this test would be contingent upon this acceptability. This concern was addressed through further research described in the following section.

PART II

Section 3

ACCEPTABILITY OF AN ALTERNATIVE TEST

Many members of our relevant publics expressed concern that an alternative test would not be recognized and accepted by those requiring a high school diploma for purposes of employment and post-secondary training or education.

Acceptability by Employers

In the earlier discussion of our interviews with employers, we noted that they were generally *willing to accept any credential representing a high school diploma as long as it is endorsed by the State of New Jersey*.

In discussions with adult educators from other states we found this to be generally true for all kinds of high school credentials. In those states where they award non-traditional high school diplomas, adult educators have found that employers generally defer to the State in assessing credibility of the credential.

Acceptability by Post-Secondary Institutions

While we intended to design the alternative test more for the non-college-bound adult, some adult educators felt that any alternative should be acceptable to post-secondary institutions in case the adults changed their minds at a later date. Consequently we surveyed admissions officers in post-secondary institutions of New Jersey to determine what types of equivalency diplomas they were willing to accept for admissions purposes. More specifically, we wanted to find out if post-secondary institutions were willing to accept the kind of learning the alternative test diploma represents.

In conducting our survey we omitted community/county colleges because all of them practice open admissions policies that do not require a diploma or its equivalent.

Vocational Technical Schools. Twenty-two vocational-technical schools were selected for survey purposes from the 1979 Directory of New Jersey Vocational Technical Institutes. Only those programs offering post secondary/adult courses were selected. Letters and questionnaires were directed to the principal at each school (see Appendix E).

Sixteen schools responded to our inquiry. Eleven of the responding programs require a high school diploma or its equivalent for admission to some or all of their post-secondary/adult programs, while four schools do not require diplomas for any of their programs, and one school no longer offers programs for adults. Respondents noted programs which require a high school diploma include aviation mechanics, cosmetology, dental assisting and other health technologies, practical nursing, and secretarial programs. Fifteen of the responding programs accept high school equivalency certificates or diplomas earned by taking the GED Test in New Jersey or other states. When questioned about the acceptability of equivalency certificates or diplomas earned through life experience or other non-traditional means, the majority also found this method of credentialing acceptable. Eleven schools accept the non-traditional diploma earned in New Jersey and ten schools accept similar diplomas earned in other states. Two schools do not accept these diplomas from New Jersey nor do they accept such diplomas earned out-of-state. The remainder did not respond to this question.

A diploma earned through the alternative test of high school equivalency proposed by this research project would be acceptable for admission to twelve programs responding. Only one school did not find the proposed alternative acceptable, and three schools gave no answer.

There were a limited number of comments offered by the respondents. Most seemed to indicate that the GED is an acceptable test for high school equivalency in relation to their institutional needs. At the same time, some noted in their comments that depending on the student's needs and the demands of the program, another option would be equally acceptable.

Because of state agency licensing regulations, some vocational-technical career preparation programs require their students to hold or acquire a high school diploma before graduation. This is the case for cosmetology and practical nursing. An alternative test option would allow many aspiring beauticians and LPN's to meet this requirement in a more useful manner.

Colleges and Universities. Four-year colleges and universities in New Jersey made up the second half of our survey of post-secondary institutions. Admissions officers from eighteen public and twelve private New Jersey institutions were sent a letter describing the research project and a questionnaire (see Appendix F).

Twelve public and ten private schools responded to the inquiry. Twenty-one of these institutions require a high school diploma or its equivalent for matriculation into degree awarding programs. All of the respondents accept high school equivalency certificates or diplomas earned by taking the GED Test in New Jersey and twenty-one accept GED certificates/diplomas from other states. One admissions officer commented that the out-of-state scores must be "equivalent to the New Jersey minimum" for acceptance at that particular institution.

The respondents were divided on the question of the acceptability of high school diplomas earned through non-traditional programs such as the adult high schools prevalent in New Jersey. Nine of the responding institutions find this credential acceptable while another nine do not accept this type of high school diploma from New Jersey or any other state. Four schools did not respond to this question. The only comment that appeared in this section of the questionnaire was that one respondent was "not familiar with any examples" of high school diplomas earned in the non-traditional manner as described.

Of greater importance was that nineteen of the colleges and universities indicated they would accept a student possessing an equivalency diploma awarded on the basis of the proposed alternative test. Only one school would not accept such a student and two schools gave no reply.

The most frequent comment from the admissions officers was that an alternative would be acceptable as long as it is endorsed by the state of New Jersey. The respondents wanted to know more about the alternative test, how scores would be reported, and the significance of the scores. Some expressed concern that students acquiring an equivalency diploma in this new manner may not be prepared to enter rigorous math and science programs. Others noted that possession of a high school diploma alone "is not enough for admission."

Both the GED test and the alternative appear to be acceptable means of acquiring a high school diploma for those students desiring to pursue degrees at the 4-year colleges or universities. Because of its academic nature, the GED Test would probably be a better indicator of success at these institutions. It has gained credibility with the admissions officers responding to our survey, and apparently has established testing as a satisfactory means of awarding high school diplomas. Testing does not seem to be an issue here. It is the content to be tested that concerns members of the higher education establishment. Abstract skills were cited by several respondents as being important to success at the college level. While nearly all of the schools would accept an alternative diploma approved by the state, many schools would also require additional evidence of academic ability such as College Board test scores.

Standards for Acceptability in Other States

The most critical issue in our public policy research was the question of standards for the award of a high school diploma. This issue surfaced as a vital concern of both advocates and opponents of the alternative test. The guidance received at the beginning of our research was that any alternative should be at least comparable in difficulty to the GED. One extreme position rejected any alternative proposal based on the perception that it would compromise the "national standard" established by the GED. Therefore, we made a special effort to examine existing policies and standards for awarding high school diplomas to children as well as adults in the fifty states.

Our review of the policy literature disclosed two fundamental approaches to high school credentialing: (1) a process orientation and (2) a performance orientation. The process orientation focuses on how the high school diploma is earned and is usually time-based. The best known example of awarding credit on the basis of a time system is the Carnegie unit which represents the successful completion of work in major curricula areas based on time spent in the classroom. The second orientation focuses on performance of objectives set prior to instruction and assessment. This is exemplified by the minimum basic skills and competency based education movements which have burgeoned during the past five years. The GED testing system is essentially performance-based.

Since it is impossible to validly equate a performance-based system with a time-based system, the problem of setting standards has been around at least as long as the GED test. Even after nearly 40 years of use, questions about the equivalence of the GED diploma still plague the field. Despite the lack of any totally satisfactory way of measuring equivalence, the GED is widely accepted as "equivalent" to a normal high school diploma for most purposes.

A complicating factor in the question of establishing standards of equivalence is the variation in standard test administration, reporting, and scoring procedures from state to state. Our research disclosed that any assertion of a uniform standard for the award of diplomas is a myth. We sent inquiries to each of the 50 states requesting information on their policies and standards for awarding diplomas to adults. We used the information obtained to verify and update Muraskin and Penfield's 1976 study High School Completion Programs for Adults: The Fifty States. Our survey confirmed their original observation:

> There is great variety among states in
> both the availability and extensiveness
> of high school diploma programs for adults.
> In some states, programs are available

> statewide and are the major means of high school completion for adults while in others they are offered only in certain parts of the state and only a few individuals participate in them. Some states place such great emphasis on the GED as the means for adults to achieve a credential that correspondence courses, credit for military training, and other means have a reduced role. In other states the opposite is true. (p. V-b-1)

Other means of acquiring credits toward the high school diploma are college level courses, vocational training or work experience, or other standardized tests. In addition, each state sets its own cutoff scores for passing the GED.

We also discussed this issue with adult educators from other states. The consensus of opinion was that the question of standards was an issue primarily among adult educators themselves. While standards are recognized as important, we tend to become extremely cautious in considering new initiatives. The collective experience with the GED and other non-traditional means of awarding a diploma has shown that the public is more willing to accept these credentials than some of the members of our own profession.

Summary

Any credentialing method that is well conceived and logically developed is likely to gain the approval of the educational community and the public at large. We have concluded that there is no uniform standard or single process that can be applied to the award of diplomas. The question of equivalence may be a moot issue. It is not essential that an alternative test be equated to the GED or other forms of high school diplomas. However, as a matter of prudent policy, we recommend that any alternative be of equivalent rigor to the current GED test among the GED test taking population.

PART III

TECHNICAL SPECIFICATIONS FOR A TEST OF SECONDARY LEVEL ADULT PROFICIENCY

Section 1

INTRODUCTION

The proposed design of an alternative to the GED as a test of secondary level adult proficiency represents a significant departure from current practice. Whereas the current GED relies heavily on the core subject matter of the traditional high school program as a basis for both format and item selection, the new test will be built on a concept of proficiency in the basic skills of reading, writing and math employed in an adult setting at a level of proficiency expected of a high school graduate.

In the section on general design factors, we have outlined and described what we see to be the important basic characteristics of the test. Three of these characteristics were provided in the guidelines received from the Bureau of Adult, Continuing, and Community Education: that the test be oriented to the mature adult, that it emphasize basic skills, and that it have diagnostic potential. In our general design section and in the subsequent sections on the various subtests, we have attempted to operationalize these characteristics by imposing certain criteria on the selection and organization of test items. Rather than dividing the subtests along traditional high school subject matter lines, we are proposing that the new test be divided into four subtests; a reading subtest, a test of mathematical skills, a test of adult writing ability, and a test of adult problem solving ability that will require integration of these skills in the solution of common problems of adult life. These subtests are described in sections 2 through 5 of this part of the report.

General Design Factors

To provide a meaningful alternative to the GED as a test of high school equivalency, several factors must be considered in the development and selection of items to be included in the test. These factors are based on certain desirable characteristics which will distinguish the alternative from the existing GED.

Design for Adults. A generally desirable characteristic of the test is that content and item selection should reflect skills and knowledge which are important to adults outside of an academic setting. Despite the fact that the test will measure the adult equivalence of high school level proficiency, the test need not reflect achievement or ability in high school academic subject matter per se. On the contrary, a rational alternative basis for selection of content and item types would be that they reflect the demands of adult life rather than the academic objectives of high school courses. As a result of this design characteristic, we would expect that the alternative test would show an age bias in favor of mature and experienced adults rather than recent high school dropouts. Items and content relevant only to the solution of higher level academic problems would be avoided in favor of items and content drawn from adult life.

Criterion Referenced. Since the purpose of the test is to measure proficiency at the level expected of a high school graduate, item selection should be made to optimize discrimination at the criterion level of performance. Typical practice in the design of norm referenced tests is to select items such that the scores on the test will be normally distributed across a wide range of abilities or proficiencies. This allows for discrimination among test takers at all levels of the continuum. Since the purpose of the proposed test is to measure test taker's performance against a specific standard of proficiency rather than to discriminate among all test takers, items should be chosen which have degrees of difficulty clustering around the criterion point. Extremely difficult and extremely easy items can be eliminated without loss of power to the test. Criterion referencing also avoids problems of lowering test standards based on performance of a specific group of high school seniors in the norming population.

Emphasis on Basic Skills. The test should concentrate on measuring reading, writing, and math skills rather than discrete knowledge. While it is impossible to totally divorce these basic skills from the knowledge base which is inherent in their performance, the test should be designed to minimize dependence upon isolated bits of knowledge and to maximize the application of reading and math skills in the solution of common problems of adult life. It is realized that adequate testing of writing skills may present some difficulty; this is addressed more fully in the section on writing skills.

Diagnostic Potential. The design of the test should provide for limited diagnosis of test takers' deficiencies so that a relevant program of remediation can be offered to persons who fail to achieve criterion level. Using sophisticated scoring and interpretation, test results will provide information on strengths and weaknesses in specific reading, writing, and math skills.

Ecological Validity. All test items should measure ability to perform common adult tasks which reflect a degree of proficiency equivalent to that of a high school graduate. Items should be presented and scored in such a way that the cognitive demands placed on the test taker are similar to those required to solve problems in every day life. Items which are contrived to test a specific skill in a manner which is not encountered in real life will be avoided. In addition, items and content matter selected for inclusion should generally meet the following criteria of ecological validity.

(1) Universality. Items should reflect knowledge and skills that are important to a large proportion if not all of the adult population. Therefore, content of items should be related to performance of common adult roles such as citizen or household decision-maker. In addition, items should reflect the social requirements of adults in all geographical locations of the state.

(2) Frequency or regularity of need. Items should be selected that reflect skills which are required on a regular basis rather than those which are likely to be needed only once or twice in a lifetime. This criterion should be weighed against the following two additional criteria.

(3) Immediacy of need. In many instances the solution of an adult task requires specific knowledge which would be normally obtained from reference sources. In other cases the knowledge required must be available to the adult immediately. In designing test items, care should be taken to differentiate between knowledge which may be normally obtained from reference material and that which an adult would be expected to know without using reference sources.

(4) Social consequences of failure. The ability or lack of ability of an individual to perform the tasks required on this test should have some social consequence for the test taker and/or for society as a whole. While there are many tasks that we might normally expect an adult to be able to perform, many of these have little or no social consequence, while others have great social consequence. For example, understanding of basic public health information has potentially great social impact, while the ability, or lack of it, to play card games has little or no impact. In designing the test, care should be taken to place greater emphasis on selection of items which measure skills and knowledge with greater social significance.

Overview of the Test

Based on the general design criteria developed in the preceding section and our own review of various tests and testing methods, we have developed a concept of how we believe the test should be constructed. Some of our choices of options are firmly supported by research data and the weight of expert opinion. In other cases, decisions were made on the basis of our professional judgment. In each case we have attempted to choose the method which we believe best meets the general design criteria.

General Organization. We have opted for a four subtest format based on a fair amount of research that suggests that there are at most three to four independent cognitive skills that can be measured in achievement tests. In our opinion, a major problem that exists with the current GED is that the subtests tend to be highly correlated with one another, and there appears to be no rational basis other than tradition for dividing the subtests along academic content area lines. We are suggesting that a test of adult proficiency should measure four basic skills that are employed in adult situations. We realize that these skills are not totally uncorrelated with one another, but they are at least conceptually independent. The four subtests we recommend are as follows:

(1) A test of reading skills which will measure proficiency in two general types of reading activities: processing and comprehension of prose passages and locating and using information in reference materials using a standard multiple choice format. Diagnostic potential will be introduced through computerized analysis of errors.

(2) A multiple choice test of math skills which measures basic computational skills, measurement and determination of area and volume, and other basic mathematical subskills necessary for solving common problems. Diagnosis is introduced by reporting errors in each subskill area and by introducing logical errors among the multiple choice distractors. Computer analysis will provide information on sources of error.

(3) A test of writing proficiency which will require writing of notes or memoranda, business letters, narrative sections of forms, and other common writing tasks. Writing will be hand scored using the Primary Trait Scoring Method, which is a derivation of holistic scoring used by the National Assessment of Educational Progress.

(4) A multiple choice subtest of applied problem solving skills. This test requires the application of problem solving skills to the solution of common tasks of adult life. It is expected that performance on this subtest will be highly related to proficiency in reading and math.

These four subtests are described in greater detail in the following sections.

PART III

Section 2

READING PROFICIENCY SUBTEST

Introduction

Reading is rightfully regarded as the most important of the basic academic skills in American society. Deficiencies in mathematics and even writing ability are often tolerated, but the inability to read is almost universally regarded as a mark of ignorance. Adults will go to great lengths to conceal reading deficiencies, and the lack of reading skills quite often acts as a barrier to social and economic advancement. Reading skills are highly related to learning ability in a formal academic environment, and reading requirements of some sort permeate nearly every facet of adult life. Reading skills are important to the knowledgeable smart consumer and the effective worker as well as the conscientious citizen.

Problems in Assessing Reading Proficiency

It is commonly believed that there is some minimum level of reading ability required for effective functioning in American society. Given the previous description of the importance of reading, this seems logical. However, despite years of research on this question (Murphy 1979; Dept. of the Army, 1965; Harman and Hunter 1979) no one has been able to define a measure of functional literacy that is both conceptually meaningful and reliable. Of the various methods used to assess functional literacy, none has been more popular than level of performance on a standardized reading achievement test reported in terms of grade levels. At various times since 1940, functional literacy has been defined as anywhere between 4th and 8th grade level of achievement. As Bormuth (1973) has noted, however, "reading grade level score does not provide us with any information on just what kinds of real-world reading tasks a person can perform competently." The Adult Performance Level (APL) project along with other functional reading tests has attempted to address this problem by assessing competency on a set of real world tasks selected as important to adult success. While reading is required on most if not all of the tasks, performance depends as much on specific knowledge as it does on application of reading skills. Results on these tests are difficult to interpret because one cannot generalize performance on any given set of tasks to a wider range of adult tasks.

A basic problem that exists in trying to assess reading ability is that we are seldom clear as to just what it is that we are measuring. Reading may be conceptualized as a process of extracting information from written materials in various forms. It is a cognitive task, and as with all cognitive activities, we cannot measure the process of reading directly. Consequently, we measure either essential components of the process, such as vocabulary, or we measure what we think are the logical outcomes of the process itself.

While math and writing have very visible and measurable outcomes, the outcomes of the reading process are not as readily apparent. The term most commonly used to describe the anticipated outcome of the reading process is "comprehension." To the layman, this term has a simple meaning. It means to understand what has been read. Reading theorists and psychometricians, however, point out that comprehension can mean many different things. Comprehension of a set of directions is different from comprehension of a story or comprehension of a poem. Comprehension for learning purposes is different from comprehension required to perform tasks of daily life. As Carver (1970) notes, the measurement of comprehension in an academic sense usually involves the measurement of a wide range of thinking skills from literal comprehension to critical thinking and aesthetic appreciation. One example of the diversity of possible comprehension tasks is provided by John Bormuth (1979). He identifies six different kinds or levels of information that can be assessed in reading testing:

1) Reference information indicating the location of material.

2) Word identity information associating sound with appropriate symbols.

3) Word meaning information associating terms in material with their meaning in context.

4) Explicit propositions (literal comprehension) specifying relationships among concepts which are signaled by the syntactic and semantic relationships among terms, sentences or larger units of material.

5) Implicit dependent propositions (inference) specifying the relationship among concepts which are derivable by logically combining two or more propositions all of which are explicit or implicitly stated.

6) Implicit, partially independent propositions specifying relationships among concepts which

> are derivable logically from propositions, only some of which are explicitly or implicitly stated in the material. (Bormuth, 1979, pp. 7-8)

While each of these might be tested under the rubric of comprehension, it is obvious that they require different levels and types of cognitive activity. In the standard multiple choice reading test, the level of comprehension assessed is determined more by the type of questions asked about the material than the difficulty of the material itself. Therefore, the measured level of comprehension on one of these tests is a function of both the difficulty of the written material and the level and type of comprehension required by the questions. This is one reason why it is often difficult to interpret the results of standardized reading tests. (O'Reilly and Schuder, 1977)

Basic Factors in Assessment

As noted in the previous section, the measurement of comprehension is not as straight-forward as is often presumed. Before we can begin to specify the methods we will use to measure reading proficiency we must have a reasonable well-defined idea of what it is we are attempting to assess. Bormuth (1979) provides some useful guidelines for clarifying our purposes in assessment of literacy.

Writer or Reader. Bormuth contends that what we are measuring is the transfer of information from the writer to the reader. In the process of measuring this transfer we are simultaneously assessing the ability of the writer to communicate effectively the information and the ability of the reader to interpret effectively that communication. In a reading test, however, we work under the assumption that the writers have been effective in their half of this transaction and that responsibility for correct interpretation lies with the reader. Obviously, we need some guidelines to insure that this assumption is valid. In the selection of materials for any reading test, some subjective evaluations need to be made about the effectiveness of the author's style as well as the appropriateness of the content for the audience that is being tested. Incidentially, readability formulas alone do not adequately control for this.

Competence or Performance. Another aspect of assessment to be considered is the problem of differentiating between competence and performance. Competence relates to potential to perform a given task rather than the actual performance of the task itself. In the real world, it is the actual performance of reading tasks that makes a difference. Ability to perform is of little consequence if that ability is not applied. However, as basic skills educators, we are interested primarily in building competence in reading, and this is what we normally try to assess. In actuality, we do not measure competence or potential directly. What we really measure is performance on a set of tasks that we hope are representative of the kinds of tasks that the reader has been trained to perform or that will be faced by the reader in the future. Thus we use performance on a small sample of tasks to assess competence to perform on a larger set of tasks. The validity of any reading test as a measure of competence is dependent upon the degree to which the sample of tasks on the test adequately represents the universe or domain of tasks that are of interest to the examiner. If the test is an achievement test, the items will be selected to represent the domain of tasks encountered in previous instruction. If the test is intended to measure competence for performing future reading tasks, then the validity of the test is dependent upon the degree to which the items on the test adequately sample the reading tasks that are likely to be performed in the future.

State or Extent. A third factor in the design of a reading test is whether the test is intended to measure the state of reading ability or the extent of reading ability. This intention provides a basic means of differentiating conceptually between criterion-referenced tests and most norm-referenced tests. In measuring the extent of information transferred we ask, how much of all the possible information that could be transferred was actually transferred to the reader? To measure this, we develop test questions which sample the entire range of possible comprehension behaviors. This is the practice employed in most norm-referenced tests, in which questions are generated to measure the extent of the reader's comprehension on a set of items and the score is compared to the scores achieved by all individuals in the norming population who took the same test. Thus the extent of the individual's proficiency is compared to the extent of all other persons' proficiency. In measuring state, on the other hand, we are interested in assessing whether the amount of information transferred was adequate. The determination of adequacy is established by criteria external to the test itself; hence the name criterion-referenced test. In this type of test, items are selected which most accurately represent the criterion level of performance. There is no need to sample the entire range of possible behaviors. In fact, to do so tends to negatively effect the validity of the test. The major problem in designing criterion-referenced tests is determining and specifying in advance what and how much information should be transferred.

Specific or General. The final factor we want to consider from Bormuth's paradigm is that of the degree of specificity or generalizability we can attribute to performance on the test items. While reading is often thought of as a highly generalized or transferable skill, recent research suggests that it is probably more situation specific than is usually thought (Scribner & Cole, 1978; Larson, 1979). This is true not only of differences in content but also in the relationship of reading to formal thought processes. Reading measured for academic purposes (reading for learning) is only moderately related to reading for the performance of normal adult tasks (reading for doing). In developing a reading test we must be conscious of the specific cognitive task demands we are requiring of the reader and their generalizability to a broader range of behaviors. Reading tasks must be representative of the domain of tasks we are attempting to represent in terms of both content and nature of cognitive demands placed on the reader.

Analysis of the Reading Component of the GED Test

Using the above basic characteristics, it is possible to describe the nature of the existing GED test and analyze some of its design weaknesses for certain types of decisions. What we are describing here is not a set of basic deficiencies in test construction per se but rather an analysis of whether this type of design and format measures the kinds of skills that are important in the decisions that will be made based on the results.

As we observed earlier the GED test is a reasonably well constructed test of academic achievement. The designers of the test argue that the GED differs from most school achievement tests in that the items are based on general outcomes of the educational process rather than specific outcomes of a given curriculum. Nonetheless, the validity of the test is seen as dependent on its general relationship to the academic outcomes of schooling rather than on its ability to predict future performance. The type of validity that is sought is content validity based on sampling a domain of items representative of the high school curriculum.

Reading ability is part of what is tested on all five subtests of the GED to the extent that reading is required to answer all items. Generally speaking, however, reading is a confounding variable rather than a variable of interest on subtests 1 and 5 (writing skills and math). On other parts of the test, reading is the primary skill being assessed. The item format employed to test reading skills is generally the same throughout the test. The examinee is presented with a reading passage followed by a set of multiple choice questions which assess the reader's comprehension of the passage.

Subtest 4 (reading skills) consists entirely of reading items of this nature. The nature of the reading requirement varies from tables and charts to poetry to narrative text, but the multiple choice format is used throughout. The reading subtest assesses reading comprehension in five areas: (1) practical reading, 15%; general reading, 35%; prose literature, 35%; poetry, 10%, and drama, 5%. Note that half of the test is devoted to reading skills employed in literature classes requiring some well developed skills in literary analysis.

In subtests 2 and 3 (social studies and natural science) the ability to read and interpret academic materials in each area constitutes 70% of the objective (GED Testing Service, 1977). Thus, across all five subtests it is fair to assert that the application of reading skills to the interpretation of academic subject matter constitutes a major objective of the test.

Writer or Reader. The GED test regulates comprehensibility differently for different sections of the test. The specifications make no mention of measuring readability of passages directly. Difficulty is generally regulated at the item level rather than passage level which is the common practice for norm-referenced tests. The following guidelines used in selecting passages for the GED are cited from the 1977 Information Pamphlet:

Social Studies

> Items should be as imaginative as possible and from a variety of reading material that may reasonably be expected to be a part of the GED candidates' experience. It is especially important to keep the reading stimulus at a simple level in order to ensure that social studies skills and not reading are being tested. (p. 16)

Science Test

> The reading load will not be such as to detract from an adequate assessment of science. Passages will be carefully organized and comprehensive in scope. The lengths of passages will vary and so will the number of questions based on each passage. Vocabularly that is unnecessarily abstract or technical will be avoided unless properly defined in the passage.

> Pictures, graphs or charts will also be used to help reduce the reading load. (p. 34)

Reading Test

> The range of difficulty and reading load of the reading passages should vary from the level which is reflected in the popular press to an upper limit appropriate to typical high school students. Knowledge of classical mythology or American lore will not be essential to the proper analysis of a passage. Items will not focus on the historical or biographical details of the author, nor will the correct answer depend on previous knowledge of the author involved in the selection. All passages in the reading test should appeal to as many segments of the GED population as possible and should be relatively free of bias or disproportionate representation of any one subgroup of people. (p. 52)

While the above specifications suggest that reading materials on all three subtests were to be selected largely from the domain of reading common to GED candidates, a subjective analysis of passages on the GED test suggests that this is not the case. Most of the passages resemble reading materials that are likely to be encountered in the secondary school or college classroom rather than in the day-to-day activities of GED candidates. There is no evidence to suggest that the writers were targeting on the population representative of GED candidates. Many of the passages, particularly in the science test, are quite difficult for persons without training in the various sciences represented. This difficulty is often hidden by employing low level questions that can be correctly answered without adequate comprehension by keeping on signal words in the text.

Competence or Performance. As noted above, the reading items on the GED test appear to assess performance on tasks likely to be encountered in the social studies, science, or English literature classroom. It is questionable whether this assesses competence to perform on reading tasks encountered in daily life. Both the reading passages and the kinds of questions asked are those which relate primarily to academic competence. In this regard the GED is typical of most academic achievement tests.

State or Extent. Both the scoring procedures and the test specifications suggest that the GED test measures extent of reading ability rather than state. Items range in difficulty from rather easy to very difficult so as to spread out the scores among the candidates. In this regard, the GED is typical of all norm-referenced tests. Each subtest is designed to provide for a normal distribution of scores with a mean of 50 and a standard deviation of 10. These parameters are established from the norming data obtained in testing high school seniors. It is clear that the GED test designers made no attempt to establish criteria for adequate performance on any subtest in advance. This is largely due to the absence of a clearly defined set of external criteria for award of a diploma that could be applied to the design of the test.

Summary. The GED appears to be a reasonably well designed norm-referenced test of ability to perform academic reading tasks. It is of limited usefulness in predicting performance or measuring competency in the performance of reading tasks commonly required of GED candidates in their daily lives.

Specifications for the Proposed Alternative

In selecting design characteristics and format for an alternative to the GED test, we were looking for a way to test general reading competence in adult life. The reading test should adhere to the general design factors described in Part III Section 1 and it should measure the process of reading in a conceptually meaningful way. Described in terms of Bormuth's analytical model, we were looking for a test which would measure the state of general competence in reading applied to common tasks of the adult world. Its validity would be assessed by the criteria of ecological validity discussed earlier as well as its ability to predict successful performance on a broad range of reading tasks facing adults in their daily lives. While the test would concentrate primarily on assessment of competence, we hope to build in some gross diagnostic potential through careful design of the items. Some specific considerations related to ecological validity are addressed below:

1) Universality. Reading passages should be selected from materials addressed to the general public in their daily lives. To be avoided are materials written for particular professional or employment groups or for narrowly defined hobbies where the terminology or subject matter would be of little interest to the public as a whole. Equally important is that the reading material should be written with the intent that the general citizenry will be able to read it. This would preclude the use of legal documents requiring legal interpretation or public announcements of a highly technical nature which are published merely to meet some legal requirement for public notice. Materials

should be drawn from media aimed at the middle to lower-middle class population (i.e., Newark Star Ledger vs. New York Times). Newspapers, magazines with wide circulation and information published by federal, state, and local agencies for public information would constitute primary sources for materials. Materials should be screened subjectively for general comprehensibility.

2) Social Consequences. Material which has great social impact should be selected over material with only limited social value. Materials related to health, political matters of general concern, economic welfare, and maintenance of the social order should receive preference over recreational or other less vital issues.

3) Use of Reference Materials. The ability to use reference materials is an essential reading skill in adult life. At the same time, it is important that the test assess the use of reference materials in an ecologically valid manner. Normally, reference materials are used in the solution of problems. Therefore, these skills will be largely assessed in the problem solving section rather than in the subtest of reading skills.

Reading Test Format

In reviewing various formats for testing reading we were drawn to a method employed in the Degrees of Reading Comprehension Test (DRCT) (Koslin, Koslin and Zeno, 1979). The test is based on a psycholinguistic view of reading which concentrates on the processes required to extract meaning from text. As such it eliminates some of the more undesirable aspects of the normal format used in reading comprehension tests. Rather than presenting a reading passage followed by a series of multiple choice questions, the DRCT provides a passage from which certain high meaning words have been selectively deleted. The examinee is required to select a correct response from a list of alternative choices. Only one possible response fits the deleted space from a semantic, syntactic, and structural viewpoint. The authors present a solid rationale for this design in the 1979 College Board publication, The Degrees of Reading Comprehension Test and Its Accompanying Technology: A Presentation.

We are suggesting two minor modifications to this test format which we believe will add a diagnostic dimension and reduce measurement error due to guessing. Rather than providing a list of five possible responses keyed to one specific deletion, we suggest a list of ten possible responses for a set of five deletions in a passage. Unlike the DRCT, not all of the possible choices would be syntactically or structurally matched to the deletion. The examinee could eliminate false responses based on syntactic and structural deficiencies as well as semantic signals. This would reward the reader who applies these reading skills to the elimination of illogical responses and improve the good readers chance of responding correctly to the item. At the same time correct answers through random guessing, which is a source of error, would be reduced. Using computer scoring keyed to provide analysis of incorrect responses the test could provide limited diagnosis of specific reading skills deficiencies.

Examples of test items using this format are shown in Appendix G.

Assessment of Other Reading Skills

While the DRCT deleted word format provides a good measure of ability to process and thus literally comprehend connected discourse, it does not assess a wide variety of skills often assessed under reading ability. The most important of these skills are addressed below:

Higher Level Thinking Skills. Included in this category are higher level inferencing skills, critical thinking skills, and aesthetic appreciation. While some facility with these skills is essential to enlightened citizenship, their primary usefulness is found in academic pursuits. We do not believe that possession of these skills is of primary importance in distinguishing between those who have a diploma and those who do not with regard to most decisions that are made about the target group. We therefore intend to omit questions that purposefully call for these kinds of skills in favor of questions of a more applied and practical nature.

Information Seeking Skills. This category includes ability to use indexes, tables of contents, and other reference materials used in locating specific information. The ability to quickly locate information is vitally important to many aspects of adult life. Systematic classification and storage of information is a science of growing importance in today's society, and perhaps the single most distinguishing characteristic of literacy is the ability to locate and use this information skillfully. Unfortunately, multiple choice tests do not tend to assess these skills very well. This is partly due to the format of the test which creates an artificial demand on the examinee. It is also due to the fact that tests can seldom make use of the kinds of reference systems people actually use in daily life. Consequently, most tests assess referencing skills in a limited and artificial context. For this reason, we suggest that information seeking skills be tested primarily in the problem solving section as a component of the problem solving process. Use of index or table of content is more appropriately considered in that context than as a subcomponent of reading. If information seeking skills are included in the reading test, the items should be scored and diagnosed separately rather than aggragated with the remainder of the reading items.

PART III

Section 3

MATHEMATICS SUBTEST

Introduction

The National Council of Teachers of Mathematics has suggested three ways that we might view mathematics:

> (1) Math as a tool for effective citizenship and personal living.
> (2) Math as a tool for functioning in a technological world.
> (3) Math as a system in its own right.
> (Edwards, Nichols, & Sharpe, 1972, p. 600)

Mathematicians and teachers of math are likely to share the third perspective, while engineers and technicians are likely to share the second. For most adults, however, the importance of mathematics is expressed in the first viewpoint. As Willoughby (1981) noted:

> The most important reason for learning mathematics...is that mathematics is, or ought to be, useful. Mathematics is useful in our everyday life. We are constantly called upon to make decisions based on probability, geometry, statistics, arithmetical estimations, measurement and estimations of measurement, rates, ratios, and the ability to read maps, blue prints, and other scale drawings. (Willoughby 1981, p. 6)

It is the usefulness of mathematics in adult life that is the primary basis for including it in a test of adult proficiency. We are not interested in whether an individual has absorbed the theory or concepts of mathematics as an academic subject but whether the individual has mastered the knowledge, operations, and techniques of mathematics sufficiently to apply them to solutions of real life problems. Therefore, our criteria for including a particular mathematical ability in our test is not whether it is part of a math curriculum but whether or not it is useful and important in the solution of real-life problems. By the same token, we are interested in testing that ability in the manner that it is most likely to be used in everyday life, as a skill which allows us "to do efficiently what would be impossible or very laborious to do without mathematics" (Willoughby 1981, p. 6).

Common Problems with Mathematics Tests

While there are undoubtedly mathematics tests that do assess mathematics ability in a real-life context, Willoughby (1981) has suggested that most math problems found in textbooks and tests suffer from four major deficiencies:

1) Makework problems - problems are presented in such a manner that they cause the examinee to do more work than would be required in real life to solve the problem. Example:

> An anthropologist uncovered 17 bones on Monday and three times as many on Tuesday. How many bones did she uncover on Tuesday? (Willoughby, p. 18)

In real life the anthropologist would count the number of bones discovered on Tuesday rather than multiplying 17 x 3. Willoughby contends that mathematics textbooks are filled with unrealistic problems that people would never have to solve in real life.

2) One-Step problems - most textbook problems require only one step to arrive at a solution. Real life problems require multiple steps that may not be simple arithmetic operations.

3) No requirement to select appropriate information - most textbook math problems provide just enough information to solve the problem. In real life there is normally an excess of information, some of which is superfluous to the solution. To solve successfully real-life problems, adults must be able to select the relevant information and plug it into the appropriate algorithm.

4) Reading skills required - most math problems require rather sophisticated reading skills to solve them. In fact, math problems present a peculiar form of reading comprehension problem that is dissimilar to other comprehension requirements. Before the examinee can solve the problem he or she must decode it. Math problems are seldom presented in the way they are encountered in life.

Problems with the GED Math Subtest

Of all the subtests on the GED, the mathematics subtest is the most difficult for older adults. Whitney and Patience (1981) found a small negative correlation (-.06) between age and scores on the mathematics subtest, while scores on all other subtests were positively correlated with age. In a 1972 study, Fischer also found that older GED candidates performed less well on math than any other section of the test. At least two characteristics of the GED test might contribute to this relationship. The first factor is speeding of the test. Whitney and Patience (1981) found that only 54 percent of all GED candidates finished the math test within the original 60 minutes alloted when working at their own preferred rate. Because of this significant speeding effect, the GED test service recently raised the time limit to 90 minutes. At this rate it is anticipated that 90 percent of candidates will finish on time working at their own rate. This same study found a correlation of .28 between age and time used to complete the math test. This means that the older candidates are more likely to be penalized by any speeding factor in the test.

A second factor contributing to the relatively poor showing of older candidates on the math test is suggested by Fischer. Through item analysis of problems on the math test she concluded that:

> ...math proficiency on the GED was predominantly measured in terms of a standard academic math area and involved memory of more specific knowledge. Information regarding more advanced math or math vocabulary was not likely to be gained through everyday experiences of adults. (Fischer, unpublished manuscript)

Fischer noted that GED candidates did as well as seniors on problems involving application of math skills to the solution of probable life situations but did poorly on problems that involved math symbols, technical vocabulary, modern math, equations or factoring. While Fischer's study was done on the old version of the GED, an examination of items on the revised GED suggests that this problem still exists.

The GED test suffers from many of the deficiencies common to math tests that were suggested earlier in this section. The majority of the problems are word problems presenting information in a narrative format which the examinee must decode, plug into the appropriate algorithm and solve in order to select the correct response from five alternatives.

1) Unreal/makework problems: Many of the problems in the GED test are similar to the kinds of problems Willoughby criticizes in his monograph. The following are examples of unreal or makework problems found in Form B of the GED Practice Test.

> Item #9 - In an orchard, all but three dozen of the 8 dozen trees are apple trees. How many apple trees are in the orchard?

Note that in real life one would just count the number of apple trees rather than count the non-apple trees and subtract it from the total.

> Item #21 - Susan wants to fence a rectangular dog run 18 meters long. If the dog run is to be half as wide as it is long, how many meters of fencing will be required?

It is difficult to imagine that anyone would solve this kind of a problem in real life. They would know that the pen was going to be 9 x 18 and would calcuate and plan accordingly. Note that pencil and paper tests almost never require measurement, which is the way people obtain data in real life.

2) One-step problems. Most of the items in the test are of the one step variety as was illustrated in the first example (subtract 3 dozen from 8 dozen). These are the easiest and least ambiguous math problems to use on a multiple choice test. Multiple step problems, where they are included tend to introduce artificial or contrived steps such as was done in the second example above (find half of 18 = 9, multiply 9 x 2 and 18 x 2, add the results to obtain the perimeter). Note the absence of any calculation for stretching or cutting of materials. Real life problems require one to make those kinds of allowances.

3) No requirement to select information. With the possible exception of some of the graph reading problems, all of the problems in the GED test provide just enough information to solve the problem. There is no requirement for the examinee to select appropriate data to solve a problem. He or she merely has to rearrange it in the appropriate algorythm.

4) Reading requirement. Not only do virtually all of the problems have a reading requirement, but several of them require rather sophisticated skills in reading to include knowledge of purely mathematical terminology and symbols. The following are examples drawn from Form B of the Practice Test:

> Item #19 - The approximate area "A" of the curved surface of a right circular cylinder is given by the formula $A = \frac{22dh}{7}$ where "d" is the diameter and "h" is the height of the cylinder. What is the approximate area of the curved surface of a right circular cylindrical tank 3 feet in diameter and 14 feet high?

> Item "15 - (Referring to a diagram) In the figure above lines AC and AB intersect at A (-1, -3) and AB is parallel to the X-axis. What is the perpendicular distance from C (3, 3) to AB?

For the adult far removed from the formal mathematics classroom these kinds of questions present a serious challenge to their otherwise well developed reading skills.

Perhaps no pencil and paper test can completely overcome all of these problems, but an awareness of these deficiencies in the design process might alleviate some of the most serious. Certainly one must start with the assumption that one is attempting test mathematical proficiency in a real-life rather than a purely academic context before these are even recognized as problems.

Basic Design Characteristics for a Valid Test of Adult Math Proficiency

In keeping with the basic overall design factors for the alternative test, we are proposing the testing of basic mathematical skills and knowledge that are applicable to the solution of problems encountered in adult life. The criteria of ecological validity outlined in the section on general design factors will be applied to the selection of items. In order to offer some diagnostic potential we are proposing to assess mathematical ability in two subtests. The mathematics subtest will assess fundamental knowledge of arithmetic facts and the ability to employ basic algorithms and operations to calculate answers to straightforward mathematical problems. The ability to apply mathematical knowledge and skills to the solution of real life problems will be assessed in the problem solving subtest.

Basic Mathematics Subtest - Included in this subtest are the basic mathematical knowledge and skills assessed outside their problem solving context. Problem statements will require minimal reading and directions will be expressd in terms of the mathematical operation required such as add, subtract, multiply, divide, calculate, express, or restate. Only the required amount of data to solve the problem should be provided. The distractors should be selected so as to represent systematic errors that are likely to occur in the performance of the required operation, such as failure to carry. All problems will be essentially one-step problems in this section. From several lists of recommended basic mathematical skills we have compiled the following list of skills and competencies to be assessed in this subtest. These are stated in order of importance.

1. Be able to add and subtract, multiply and divide numbers of up to 6 digits with decimals to the hundredths place.

2. Be able to calculate percentages given two whole numbers.

3. Be able to convert decimals to percents.

4. Be able to convert common fractions (1/2, 1/4, 3/4, 1/3, 2/3, 1/8, 3/8, etc.) to decimals.

5. Be able to express numbers up to the thousands place in written form as is required on checks.

6. Be able to calculate perimeter and area of rectangles, triangles, and circles given a diagram with relevant dimensions provided.

7. Be able to calculate volume of cubic forms given a diagram with appropriate dimensions.

8. Given a common measurement scale, be able to round off a measurement to a specified unit (nearest inch, pound, etc.)

9. Be able to apply scaling or ratio techniques to the reduction of dimensions on a given diagram.

10. Be able to estimate answers and detect gross errors in calculations.

11. Be able to solve a linear equation of no more than three variables when values for two variables are provided. (Example: Rate x Time = Distance. Given distance and rate, solve for time.)

Requirements to perform other mathematical operations may be justified on the basis that they are required to solve problems included in the applied problem solving test. However, all problems in that subtest must meet the criteria of ecological validity. Refer to the section on applied problem solving subtest for additional mathematics requirements.

Technical Design Factors

All items in the mathematics subtest will be multiple choice. The stem will state a simple mathematical requirement in plain language such as "find the area of the figure shown below." Distractors will be developed such that specific distractors (incorrect responses) will indicate a systematic deficiency in operational procedure.

Example: Find 75% of 90:

A. 675.0 (incorrect placement of decimal)
B. 67.50 (correct response)
C. 10.80 (incorrect column alignment)
D. 645.0 (incorrect multiplication)

In scoring the responses the computer will be programmed to diagnose specific math deficiencies based on the types of errors made in solving the problems.

Examinees will be expected to achieve a mastery level of 85% correct on this subtest. In general we would recommend that the test be untimed to preclude discrimination based on age. However, we recommend that the test be designed so that at least 95% of the GED candidates could finish the test in one hour working at their preferred rate.

PART III

Section 4

WRITING SUBTEST

Introduction

Before making any decisions about how writing should be tested, or about what facets of writing should be tested, it seemed necessary to consider, in the broadest possible sense, the ways in which writing manifests itself in the adult world. As Cooper and Odell (1977) point out, any attempt to describe comprehensively writing must include:

> all kinds of writing that people do out there in the world, not just the one or two kinds which are of traditional interest in secondary schools or colleges. (p. x)

Various researchers have employed different approaches to determining and listing the types of writing that occur in modern society, each approach yielding lists of various degrees of completeness. Some focused on the function of writing, others on the settings in which writing takes place, still others on the very specific forms in which writing occurs. The list presented in Table I represents a compilation of the lists of writing activities or products presented in studies using all of the above approaches. For the sake of uniformity, all entries on the list have been expressed as products of writing; for the sake of manageability, the listing has been restricted to major classes and general categories of written products, rather than a seemingly endless array of highly specific products.

TABLE I

MASTER LIST*: Classes and Categories of Written Products

Class	Categories
Books	fiction non-fiction reference
Monographs, Tracts and Dissertations	scientific technical philosophical

TABLE I (cont.)

Class	Categories
Dramatic Writings	scripts screenplays dramatic monologues interior monologues Socratic dialogues
Poetry	(all types)
Shorter Prose (fiction)	short stories sketches
Shorter Prose (non-fiction)	critical essays expository essays persuasive essays sketches/themes technical reports diaries personal journals speeches
Journalistic Prose	journal articles magazine articles news reports interviews editorials advertising copy
Correspondence	formal letters personal letters formal notes informal notes greeting cards post cards memoranda
Miscellaneous	legal documents resumes schedules directions/instruction minutes/taken notes forms

*This master list of adult writing classes and categories represents a compilation of lists of writing activities/products presented by Cooper & Odell (1977), Norris (1969), Northcutt (1975) and Weinstein & August (Note 1).

An Overview of the Writing Process

Every writing activity may be analyzed into the series of sequential states, as depicted in Figure I.

FIGURE I

Stages of the Writing Process (General)

IMPETUS ---> AIM ---> PLAN ---> EXECUTION ---> PRODUCT ---> AUDIENCE RESPONSE

In different types of writing, and in different situations, the various stages assume varying degrees of relative importance, and require different amounts of conscious effort. The stages may be described in the following way.

Stage One: The Impetus

Writing does not simply occur. All writing has a human agent, who engages in the act of writing due to an internal or external motivation or cause. Examples of internal motivation include a desire to create, a need or desire to express feelings, and a need or desire to communicate with others. External motivation refers to a demand for writing placed on an individual by his/her environment; examples include the demands of society, demands of the workplace, demands of household management, and demands of the school.

Stage Two: The Aim

Faced with an impetus, an individual formulates a certain aim or purpose which he/she believes can be accomplished through writing. There are three main categories of aims, namely:

Self-expressive. The individual views the act of writing as personally fulfilling in and of itself. The aim of self-expressive writing is accomplished in the actual execution stage, and the product and any audience response are of incidental and secondary importance.

Literary/Artistic. The individual writes in response to a creative impulse, and the aim of writing is to create a work of art. The product, especially in terms of the aesthetic qualities of the language employed, supercedes both the execution and audience response in importance.

Transactional Communication. The individual employs writing as a means to purposeful communication with others. Writing of this nature is by far the most common type, and includes a number of traditional subdivisions, namely expository writing, persuasive writing, expressive writing, etc. The accomplishment of communication, as evidenced by the audience response, is the primary goal of the writing.

The stages of writing required by these three main categories of aims are depicted in Figure 2.

Stage Three: The Plan

In light of what he/she hopes to achieve by writing, the writer defines the task, forming tentative mental outlines, and making general decisions about style, length, tone, complexity and required quality.

Stage Four: The Execution

The plan is implemented in the actual act of writing. This stage involves continuous decisions about the features of the final written product, including word choice, grammar, syntax, etc. The plan is modified as needed and, typically, the product is read and revised. This stage serves as the end or outcome of self-expressive writing.

Stage Five: The Product

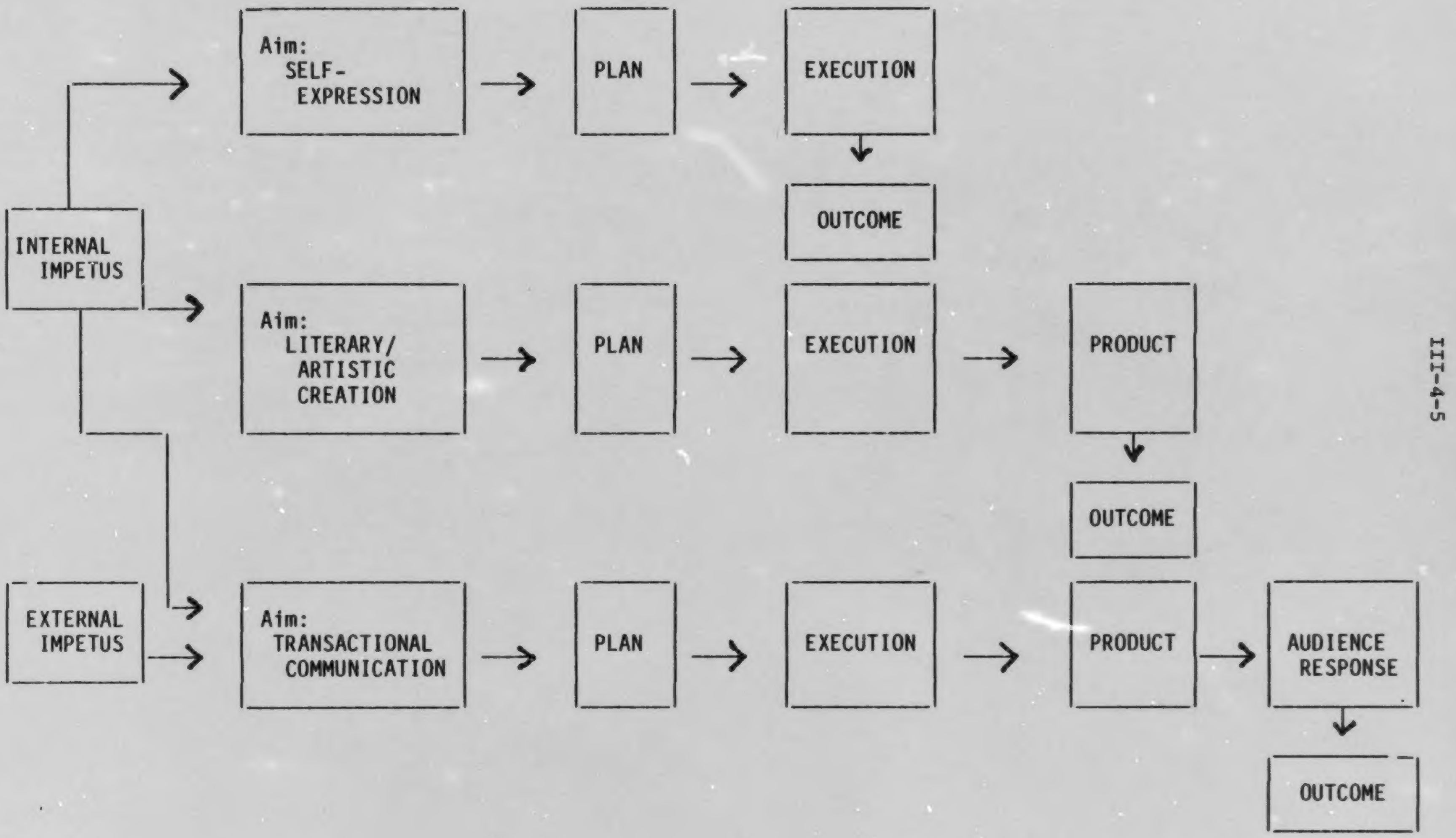
Once the final product is complete, writer relinquishes control of the writing process. This stage serves as the end or outcome of literary/artistic writing.

Stage Six: The Audience Response

This stage represents the goal and desired outcome of all transactional communication, and requires that the written product be read and responded to. The nature of the audience respnse ranges from the overt and immediate (as in following a recipe) to the unobservable (as in reading a news report).

FIGURE II

Stages of the Writing Process for Three Main Categories of Aims


INTERNAL IMPETUS
EXTERNAL IMPETUS
Aim: SELF-EXPRESSION
PLAN
EXECUTION
OUTCOME
Aim: LITERARY/ ARTISTIC CREATION
PLAN
EXECUTION
PRODUCT
OUTCOME
Aim: TRANSACTIONAL COMMUNICATION
PLAN
EXECUTION
PRODUCT
AUDIENCE RESPONSE
OUTCOME

Determining the Success of a Writing Activity

In the adult world, the success of any writing activity can be judged best in terms of outcomes. If a person writes a request for absence to a child's teacher, the success of the writing is best indicated by whether or not the child is excused. If a person completes an order blank for a mail order product, writing is successful if the order can be properly filled.

The above description of the writing process has grave implications for assessment of writing. Traditional tests focus on only one stage of the process, the Executive Stage. Such a focus results in a test that is administratively convenient, but one which ignores the purposeful nature of any writing activity.

Any attempt at the assessment of writing which purports to be both meaningful and comprehensive must measure the success of writing primarily in terms of the degree to which the aim of the writing is or is not accomplished. Stated more succinctly, the success of writing depends on the extent of agreement between the intended outcome and the actual outcome.

Problems in Testing Writing

For over fifty years, the testing of writing has been a controversial issue. Typically, testing methods proposed by psychometricians to increase reliability are considered objectionable by English teachers in terms of substance and validity. A good deal of the controversy has centered around the College Board English Composition Test, which has consequently undergone repeated revisions since the early 1920's (see Godshalk et al., 1966). The problem is perhaps best summed up by a newspaper editorial quoted in Cranford and Burnham (1946), in which an irate English teacher insists that testing writing skills in a multiple-choice format is analogous to awarding driver's licenses for the demonstrated ability to read stop signs and recognize Buicks.

The major issues in the testing of writing are:

Atomistic vs. Holistic

In terms of content-focus, tests of writing can be divided into two main types: atomistic and holistic. Atomistic tests focus on particular features of writing, and primarily on isolated subskills (such as spelling and grammar) which are required during the execution stage of the writing process. Holistic tests, as the name indicates, treat samples of writing as whole entities to be judged in terms of overall effectiveness rather than on subskills alone.

Selected-Response vs. Performance

In terms of format, writing tests can also be divided into two types: selected-response and performance. Performance tests require the test-taker to generate a response, that is, to actually engage in a writing task. Selected-response is a generic term for any type of item which requires the test-takers to select, rather than construct or produce, their responses. Although selected-response item types include matching and true-false items, by far the most popular item-type is the multiple-choice item with four or five possible answers.

Two Models of Writing Assessment

Traditionally, atomistic, selected-response tests have dominated the field of writing assessment; the GED Writing Skills Test is an example of this model of testing. More recently, holistic tests of writing performance have begun to increase in popularity; examples of this model include the College Board English Composition Test, the New Jersey Basic Skills College Placement Test, the College Level Examination Program and the New York State Regents' Examination. Characteristics of these two models of writing assessment are presented below.

Atomistic, Selected-Response Model

Assumptions: 1) Writing is a sum of separable, component subskills. The essence of writing activity can be viewed as a simple composite, consisting of *x* units of spelling plus *y* units of grammar plus *z* units of syntax, etc.
2) By testing each component subskill in isolation, and then combining the results, meaningful conclusions can be drawn regarding an individual's ability to meet the writing demands of adult life.
3) An individual who is able to recognize errors in the writing of others will be able to write without errors.

Test Content: Isolated subskills common to the execution stage of all writing tasks. Examples include spelling, punctuation, capitalization, grammar, etc.

Test Format: Usually mutiple-choice.
The test-takers must:
1) read and understand the directions
2) search for possible errors in the presented stimuli
3) select the appropriate response from five offered choices
4) record the response on the answer sheet.

Scoring: Usually done by machine.

Strengths:
1) Capable of being scored rapidly and inexpensively by machine.
2) High reliability of measurement.
3) The test-takers task is clearly defined.

Weaknesses:
1) Questionable validity, in that examinees are never required to write actually.
2) Encourages guessing.
3) Success on the test hinges on the ability to read and edit.
4) The multiple choice format is not appropriate for measuring the ability to synthesize ideas, to write effectively, or to perform certain types of problem-solving operations (Papham, 1978).
5) Writing is treated as a mechanical, rather than communicative task.
6) No attempt is made to measure the overall effectiveness of writing ability in terms of outcomes.
7) Results, usually reported as standard scores, are difficult to interpret and translate into meaningful instructional objectives.

Holistic, Performance Model

Assumptions: 1) Writing is more than the sum of its component parts. To describe writing as a composite of skills is too simplistic to explain the complex network of strategies, skills, and processes that result in successful writing.
2) Writing is situation specific. Although there are elements common to all writing activities, different tasks require different cognitive processes, different strategies and different writing techniques.
3) The best way to determine whether or not an individual can meet the writing demands of life is to require that individual to engage in simulated writing tasks representative of those encountered in the real world.

Test Content: Complete writing tasks.

Test Format: Actual writing.
The test-taker must:
1) read and understand the directions
2) plan and execute the appropriate response.

Scoring: Rapid systematic hand-scoring by at least two trained readers.

Strengths:
1) Validity is clearly established, since writing is tested in process.
2) Reliability is adequate, given controlled scoring conditions.
3) Guessing is eliminated.
4) Reading demands are limited to directions.
5) The test-taker's task relates to writing demands outside of the testing situation.

Weaknesses:
1) Lower reliability.
2) Slower, more costly scoring.

Problems with the GED Writing Skills Test

The GED Writing Skills Tests consists of 80 multiple-choice items grouped into five subsections, each with a separate set of directions. Detailed information for each of the subsections is presented in Table II, below (based on Interim Examiner's Manual, August 1979, and Information Pamphlet on the New GED Tests, October 1977).

Table II

Description of Subsections on the Writing Skills Test

Subsection	Number of Items	Percent of Total Test	Description of Stimulus	Examinee's Task
Spelling	10	12.5	List of four words plus a "no error" option.	Determine which word, if any, is misspelled.
Capitalization & Punctuation	10	12.5	Single sentence with four underlined portions plus a "no error" option.	Determine which one, if any, of the underlined portions is incorrect.
Usage	24	30	Single sentence with four underlined portions plus a "no error" option.	Determine which one, if any, of the underlined portions is incorrect.
Sentence Correction	24	30	Single sentence with one underlined portion. Below the sentence, the underlined portion appears in four revised forms and in the original form.	Select the variation which makes for the most effective expression, based on a knowledge of diction, style and sentence structure.
Logic and Organization	12	15	A passage containing a variety of errors followed by a set of multiple-choice questions.	Select the option for each multiple choice question which maximizes the style and organization of the present passage.

As suggested by Table II, the test is atomistic in content and and selected-response in format.

Problems with GED Assumptions

The Writing Skills Test, being both atomistic and selected-response in nature, rests on the following implicit assumptions:

1) Writing is a sum of separable component subskills. Any writing task can be viewed as a simple composite, consisting of 10 units of spelling, 10 units of capitalization and punctuation, 24 units of diction, etc.

2) By testing each component subskill in isolation, and then tallying the scores, reliable and meaningful conclusions can be drawn regarding an individual's actual writing ability.

3) An individual who is able to recognize errors in the writing of others will be able to write without errors.

When one examines the test and these implicit assumptions, some obvious questions arise in regard to the validity of the test as a measure of actual writing ability. There is little doubt that the test, given the professionalism of its construction and the soundness of its psychometric properties, is a reliable measure of something. But one is reluctant to call that something writing ability, when, in fact, no actual writing is required or allowed on the part of the test-taker. Rather, the test-taker is forced to assume the role of an editor who corrects errors and suggests revisions in some else's writing. And in this role of editor, the test-taker is required to deal with vocabulary/spelling demands and a complexity of form and style which may be considerably above the level he/she would need or choose to use in order to communicate in writing.

Out of fairness to the authors of the test, one must credit the title of the test: Writing Skills Test. There can be no argument that the skills tested can and do contribute to the act of writing. The danger lies in the widespread notion that the test is, in fact, a performance measure of writing ability. It is not such a performance measure, any more than a paper-and-pencil exam can be a measure of actual driving ability.

Validity Issues

The majority of arguments presented for the validity of atomistic tests of writing point to reasonably high correlations with English grades, teacher ratings of writing ability, and/or holistically or analytically graded compositions (Diederich, 1950; Huddeson, 1954; Godshalk, et. al., 1966). The strength of these validity studies, and others like them, is largely undercut by three shortcomings. First, in many of the studies, the measures with which atomistic test scores were correlated (e.g., holistically graded essays, English class grades, etc.) were themselves unstable, unreliable or of dubious validity. Second, there is a good deal of inconsistency in both the nature of the findings and the way in which the findings have been interpreted from one researcher to the next. Third, one must remember that many things in this world are correlated, particularly measures of academic achievement or ability, and the existence of a significant correlation is inadequate evidence that two tests are measuring the same thing. None of the studies reviewed made an attempt to establish divergent validity by demonstrating substantially higher correlations than those achieved with less related measures (for example, standardized math scores).

The issue of divergent validity is far from pedantic, when one attempts to explain the intercorrelations between total scores on the GED Writing Skills Test and total scores on the other four tests in the battery; they are (from ETS publication SR-77-75, 1978):

Writing Skills x Social Studies	.779
Writing Skills x Science (Total)	.723
Writing Skills x Reading Skills	.723
Writing Skills x Math	.646

Such high intercorrelations invite speculation in a number of directions, but one thing is certain: People who score well (or poorly) on the Writing Skills Test can be expected to score reasonably well (or poorly) on the other four tests. Is this an artifact of a reading ability that cuts across content/skill areas, as they are measured on the test, or is this an artifact of the similarity of test format? In all probability, it is a little of both. But it is the second half of the question that is of particular interest here. To what extent are the intercorrelations due to the fact that on all five tests the examinee is presented with the same basic task, requiring roughly the same steps, namely:

1) read, comprehend and follow the supplied directions,
2) read and comprehend the presented stimuli,
3) review the five offered choices,
4) select the appropriate response and record it on the answer sheet.

And a final question: Would one expect the same level of correlation if writing was tested in process? Such research is badly needed.

Despite the growing concern over the validity of testing writing as it is done in the Writing Skills Test, and despite the refinement of several alternatives which are markedly more ecologically valid, the atomistic, selected-response model continues to dominate the field. This is due to several reasons, which will be indicated below under the heading "Summary of Strengths," but the most persistently touted benefit of the selected-response model is the ability to achieve extremely high reliability of measurement. Unfortunately, such high reliability is achieved only by reducing the validity of the test.

Summary of Strengths of the GED Writing Skills Test

-- High reliability of measurement. Estimates of reliability, using Kuder-Richardson formula (20), are .927 to.949.

-- Designed for machine scoring which results in
  - rapid scoring of large numbers of tests
  - inexpensive scoring
  - a hypothetical mark-remark reliability of unity (barring mechanical malfunction).

-- Most younger students are familiar with the multiple choice format.

Summary of Weaknesses of the Writing Skills Test

-- Questionable validity. Test-takers do not actually engage in the act of writing. The assumptions discussed above (p. 10) have not been substantiated.

-- The multiple-choice format encourages guessing. In order to achieve a passing standard score of 35, a test-taker must answer only 22 or the 80 items correctly. The "most likely chance score based on all eighty items is 16" (ETS report SR-78-04, 1978, p. 9).

-- Writing measurement is unnecessarily confounded by the reading demands of the stimuli and the directions.

-- The nature of the test fosters the development of inappropriate instructional objectives for adult learners in GED test preparation programs. In order to prepare efficiently for the test, adults must focus their attention on analytic grammar and the nuances of the language, honing their ability to recognize errors in the writing of others, rather than the ability to generate written products of their own. Ample evidence of this tendency is available to anyone who examines the commercially prepared GED preparation books used in adult learning centers.

Proposed Subtest of Writing Proficiency

In the early stages of our research into an alternative to the GED Test of Writing Skills, we were working under the assumption that the specifications for an alternative test would necessarily retain the selected-reponse format, in order that we might include provisions for machine scoring. As the project advanced, however, we became increasingly aware of the incongruity of recommending a model of writing assessment that was in obvious conflict with the very principles of ecological validity which were to serve as the foundation for the proposed test, namely:

- -- The content of the test should be representative of the real-life tasks and everyday demands of the adult environment.
- -- The format of the test should allow adults to utilize the same strategies and techniques which they would employ in their roles as citizens, workers, and household decision-makers.

Our attempts to resolve this conflict led us, instead, to a fuller realization of the conceptual and theoretical problems implicit in the atomistic, selected-response model of writing assessment.

The specifications for a proposed subtest of writing proficiency, as presented below, represent a radical departure from the GED Writing Skills Test. In order to justify this departure, and in order to insure that the proposed test will have the sound theoretical base absent from the GED Writing Skills Test, this paper will document not only research findings, but also the rationale for the sequence of decisions which culminated in the proposed specifications.

Pragmatic Writing: A Definition

In deciding on the types of writing to be tested on the proposed test, we were guided by the criteria stated in the "General Design Factors" section of this paper (see above). In restating these criteria so that they would be directly applicable to the selection of content for the writing test, we *ipso facto* formulated a definition of the type of practical, or pragmatic writing which we hoped to measure on the proposed test.

The statements below serve as the criteria for content selection and, when taken together, as a definition of pragmatic writing. Pragmatic writing:

- -- is _purposeful communication_ with intended outcomes which are transactional, rather than self-expressive or literary.
- -- refers to the kinds of writing required of adults in their _common roles as citizens, workers and household decision-makers_, as opposed to writing which requires special training or which is produced by paid professional writers.
- -- refers to writing demands which are _universal_, in that they are encountered by a large percentage of the population.
- -- is _important_, especially in terms of the social or personal consequences of not being able to meet a writing demand.
- -- is _regularly_ or _frequently_ encountered by adults in their common roles.

Developing a List of Pragmatic Writing Activities/Products

We searched the literature in an attempt to locate research studies dealing specifically with the extent, frequency and importance of various writing activities in the adult world, but were unable to find a single, major study which directly addressed these issues.

In the absence of research, we opted for a guided decision-making procedure in which the above-stated criteria for content selection were subjectively and systematically applied to the master list of written products presented previously in Table I. This procedure led to a pair of decision-making matrices (Tables III and IV), which resulted in the greatly reduced listing presented in Table V.

Table III

Decision-Making Matrix A: Classification of Written Products by Intended Outcome

Class of Product	Category of Product	INTENDED OUTCOME Transactional Communication	Literary/ Artistic Creativity	Self-Expression
Books	fiction		X	
	nonfiction	X		
	reference	X		
Monographs, Tracts & Dissertations	scientific	X		
	technical	X		
	philosophical	X		
Dramatic Writings	scripts		X	
	screenplays	X	X	
	dramtic monologues		X	X
	interior monologues		X	
	socratic dialogues	X		
Poetry	(all types)		X	X
Shorter Prose (fiction)	short stories		X	
	sketches		X	
Shorter Prose (non-fiction)	critical essays	X		
	expository essays	X		
	persuasive essays	X		
	sketches/themes	X	X	
	technical reports	X		
	diaries			X
	personal journals			X
	speeches	X	X	
Journalistic Prose	journal articles	X		
	magazine articles	X		
	news reports	X		
	interviews	X		
	editorials	X		
	advertising copy	X		
Correspondence	formal letters	X		
	personal letters	X		
	formal notes	X		
	informal notes	X		
	greeting cards	X		
	post cards	X		
	memoranda	X		
Miscellaneous	legal documents	X		
	resumes	X		
	schedules	X		
	directions/instructions	X		
	minutes/note-taking	X		
	forms	X		
	lists/outlines	X		

Table IV

Decision-Making Matrix B: Classification of Written Products By Role of the Writer

Class of Product	Category of Product	ROLE OF THE WRITER			
		Professional Writer	Writer with Specialized Training	Student	Citizen, Worker or Household Decision-Maker
Books	non-fiction	X	X		
	reference	X	X		
Monographs, Tracts & Dissertations	scientific		X		
	technical		X		
	philosophical		X		
Dramatic Writings	screenplays	X	X		
	socratic dialogues		X		
Shorter Prose (non-fiction)	critical essays	X	X	X	
	expository essays	X	X	X	
	persuasive essays	X	X	X	
	sketches/themes	X		X	
	technical reports		X	X	
	speeches	X	X		
Journalistic Prose	journal articles		X		
	magazine articles	X	X		
	news reports	X		X	
	interviews	X			
	editorials	X			
	advertising copy	X			
Correspondence	formal letters			X	X
	personal letters			X	X
	formal notes			X	X
	informal notes				X
	greeting cards				X
	post cards				X
	memoranda		X		
Miscellaneous	legal documents		X		
	resumes				X
	schedules		X		X
	directions/instructions	X	X	X	X
	minutes/note-taking			X	X
	forms			X	X
	lists/outlines		X	X	X

Table V

List of Adult Pragmatic Writing Products/Activities

Categories	Type/Function
Formal letters	requesting information communicating information registering a complaint requesting action stating an opinion letter of application making an inquiry
Personal letters	communicating information expressing emotions maintaining social relations
Formal notes	invitations/responses thank you notes announcements
Informal notes	(all types)
Cards	greeting cards post cards
Minutes/note-taking	verbatim summary
Directions/instructions	travel recipes procedures
Forms	(all types)
List/outlines	(all types)
Resumes	--
Schedules	appointment calendars time sheets

In Table III, written products were classified according to intended outcomes. Only products written for the purpose of transactional communication were retained for further consideration. Table IV subjects these surviving products to classification according to the probable roles of the writers. Those products which an adult would not normally be expected to write in fulfillment of the role of citizen, worker or household decision-maker were deemed inappropriate test content. Written products which survived both Table III and Table IV appear, in expanded form, in the List of Adult Pragmatic Writing Products/Activities presented as Table V.

As a final step, the entries on Table V were examined according to the original criteria for content selection, in an attempt to discover the extent of occurence and the relative pragmatic value of each. This final analysis is depicted in Table VI, which will serve as the blueprint for the proposed test. In general, the more criteria that a given product/activity meets, the stronger the argument for its inclusion in the proposed test.

Table VI
Decision-Making Matrix C: Pragmatic Writing Products/Activites, The Common Adult Roles in Which They Occur, and The Criteria Of Pragmatic Value Which They Satisfy

Pragmatic Writing Products/Activities		Common Adult Roles			Criteria of Pragmatic Value		
Category	Type/ Function	Citizen	Worker	Household Decision-Maker	Important	Common	Regular/ Frequent
Formal Letters	Requesting Information	X	X	X	X	X	
	Communicating Information	X	X	X	X	X	
	Registering A Complaint	X	X	X	X	X	
	Requesting Action	X	X	X	X	X	
	Stating an Opinion	X		X			
	Letter of Application		X	X	X	X	
	Making an Inquiry	X	X	X	X	X	
Personal Letters	Communicating Information			X		X	
	Expressing Emotions			X		X	
	Maintaining Social Relations			X		X	
Formal Notes	Invitations/ Responses			X		X	
	Thank you notes			X		X	
	Announcements			X		X	
Informal Notes	(all types)	X	X	X	X	X	X
Cards	Greeting cards			X		X	X
	Post Cards			X		X	
Minutes/ Note-Taking	Verbatim						
	Summmary	X	X	X	X		
Directions/ Instructions	Travel		X	X	X	X	X
	Recipes			X	X	X	
	Procedures		X	X	X	X	
Forms	(all types)	X	X	X	X	X	X
Lists/ Outlines	(all types)		X	X	X	X	X
Resumes	--		X		X		
Schedules	Appointment Calendar		X	X	X	X	X
	Time Sheets		X		X	X	X

Section of a Model for the Proposed Test

In selecting the assessment model for the proposed test, the following guidelines were employed:

1) The model selected must provide a valid and effective means of determining whether or not an adult can meet the writing demands encountered in the everyday world. Therefore,

2) the model selected must allow for the testing of the types of writing listed in Table V; and

3) the model selected must assess writing in terms of outcomes, rather than merely focusing on the "necessary but not sufficient" mechanical subskills associated with the execution stage of the writing process.

Clearly the atomistic, selected response model does not comply with any of these guidelines, since it focuses only on the mechanical subskills of the execution stage. We therefore turned our attention to the various types of holistic scoring which have been developed.

In its simplest form, the holistic model requires the test-taker to actually engage in a specified writing task. The product is then read and scored quickly and impressionistically by a trained reader who assigns the paper a number score of, say, zero to four based on overall quality of the writing. No attempt is made to analyze subskills or classify errors. The reliability problems which have traditionally plagued the scoring of essays are largely overcome through the use of a relatively coarse metric (i.e., only four to six possible scores) and through training sessions which calibrate the expectations of the scorers.

Primary Trait Scoring

For the proposed subtest, we settled on a specialized variant of holistic scoring called *Primary Trait Scoring* (see Lloyd-Jones, 1977, and sources listed in Reference Note 2 for a description of the development of this scoring method). This system, which was designed for use in the writing component of the National Assessment of Educational Progress, differs from simple holistic scoring in that scorers are instructed, by means of a detailed scoring guide, to concentrate on particular aspects or traits of the written product, and to assign a score primarily on the degree to which the indicated traits are evidenced in the writing. The flexibility of Primary Trait Scoring allows for the development of scoring guides which will put the emphasis on the *outcomes*, rather than the *mechanics*, of the pragmatic writing tasks included in the proposed subtest. It is through the inclusion of a highly detailed scoring guide that Primary Trait Scoring achieves at once its adaptability and reliability, and the validity of any exercise is a function of the quality of the accompanying scoring guide. For this reason, the scoring guide for each exercise must be developed simultaneously with, rather than after, the development of that exercise. Primary Trait Scoring can best be described by showing how it can be operationalized in the proposed test.

Specifications for the Proposed Subtest of Writing

In order to implement Primary Trait Scoring in the proposed subtest, the following steps are required:

Step One: Defining the Domain

To a large extent, the groundwork for this step has been accomplished in the previous section of this paper. In reviewing Table VI in light of the proposed testing model, it was discovered that the following revisions were necessary:

- Certain types of pragmatic writing products/activities involve reading demands as great as, or potentially greater than, the demand for writing ability. For this reason, the following should be considered for inclusion in the Applied Problem-Solving subtest rather than the Writing Subtest:
    - forms (all types)
    - lists/outlines (all types)
    - schedules (all types)
- Resumes, although an important writing task, require access to personal records and a good deal of time to execute. For this reason, they will not be considered appropriate content for the proposed test.
- The taking of minutes or notes necessitates some form of oral presentation which is beyond the capacity of the proposed test. They will not be included on the proposed test.
- Greeting cards and post cards are merely specialized media for the writing of formal and informal notes. They will no longer be considered separately.

The surviving categories and types of writing products/activities are presented in Table VII, The Domain of Content for the Proposed Subtest of Writing, along with an indication of the adult roles in which they are encountered and the criteria of pragmatic value which they satisfy.

Table VII

The Domain of Content for the Proposed Subtest of Writing

Writing Activities/Products		Adult Roles in Which Encountered			Criteria of Pragmatic Value		
Category	Type/ Function	Citizen	Worker	Household Decision-Maker	Important	Common	Regular/ Frequent
Formal Letters	Requesting Information	X	X	X	X	X	
	Communication Information	X	X	X	X	X	
	Registering A Complaint	X	X	X	X	X	
	Requesting Action	X	X	X	X	X	
	Stating an Opinion	X		X			
	Letter of Application		X	X	X	X	
	Making an Inquiry	X	X	X	X	X	
Personal Letters	Communicating Information			X		X	
	Expressing Emotions			X		X	
	Maintaining Social Relations			X		X	
Formal Notes	Invitations/ Responses			X		X	
	Thank You Notes			X		X	
	Announcements			X		X	
Informal Notes	(all types)	X	X	X	X	X	X
Directions/ Instructions	Travel		X	X	X	X	X
	Recipes			X	X	X	
	Procedures		X	X	X	X	

Step Two: Sample the Domain

In constructing the proposed subtest, the test designer should sample the domain presented in Table VII, keeping the following considerations in mind:

-- Variety. It is suggested that the subtest sample from at least three of the categories in order to measure writing ability across a number of situation-specific tasks.

-- Pragmatic Value. Preference should be given to writing activities which are encountered in more than one adult role and/or which satisfy more than one of the desired criteria. The check marks should be considerd value weightings. Most likely, each test should include a formal letter, an informal note and written directions/instructions.

-- Tractability. Each selected task should be able to be completed in a relatively short period of time (probably 20 minutes), and should lend itself to the development of a workable scoring guide. Furthermore, the task should not require the imposition of complex reading demands, either in the directions or in the stimulus.

Step Three: Determine the Primary Trait(s)

In general, the primary trait will be based on the desired outcome of the writing activity. In all of the writing activities indicated in Table VII, the desired outcome is some form of audience response. In determining the primary trait, it is expedient to ask oneself, "What, above all else, will allow this writing to achieve its aim?" Occasionally this will result in two or three primary traits (very often "clarity of organization" and "inclusion of necessary information").

In making the decision, the following should be kept in mind:

-- Don't overspecify. Attempts to focus attention on minute features (such as subskills of execution) will adversely effect inter-rater reliability.

-- Restrict the number of primary traits. Each trait requires a separate impressionistic judgement on the part of the scorer. To specify more then two or three traits will increase the cost of scoring by increasing the scoring time, and will most likely adversely effect reliability.

-- The selected traits should themselves have pragmatic value. Any attempt to measure extent of vocabulary or variety of style would be out of place in determining an adult's ability to cope with everyday writing demands.

Step Four: Develop the Exercise and Scoring Guide.

(In reading this section, it will be necessary to refer to the sample exercise and scoring guide presented as Appendix H.)

In developing the exercise, it is essential that the task be clearly enough defined to evoke the desired trait. At the same time, the directions must be kept simple enough to avoid unnecessary reading demands, and the stimulus must be kept simple enough to minimize distractions.

In developing the accompanying scoring guide, it is necessary to anticipate possible responses and problem areas. It is important to note that the scores represent coded descriptions rather than rank or interval scales. A given writing sample will either be judged adequate, or be assigned a score indicating a defined problem. In light of this, the test might reasonably be considered criterion-referenced (in that the level of mastery is defined) and diagnostic (in that the problem codes supply information potentially valuable to instructional purposes.)

Step Five: The Field Test

Both the exercise and scoring guide must be piloted to measure their effectiveness. Revisions are then made as necessary. The field test also can be used as a sort of norming, wherein expectations may be adjusted up or down depending on the success of a selected population.

Step Six: The Selection and Training of Scorers

Lloyd-Jones (1977) suggests that once a scoring guide is created "presumably any bright and verbal person can use it" (p. 45). New Jersey is fortunate in that pool of trained holistic scorers exist, and work on per diem basis at the Educational Testing Service in Princeton.

Despite their experience, however, it is necessary to train scorers in the use of each new scoring guide, so that they can gain the type of familiarity which permits rapid, impressionistic scoring. During the training session, scorers are presented with a scoring guide package containing the following:

1) The exercise itself.
2) A statement of the primary trait(s).
3) A rationale for the selection of the trait and the use of scoring guide.
4) The scoring guide itself.
5) Sample paper, already scored, with detailed discussions of why each received the assigned score.

A partial scoring guide package is presented in Appendix H, including everything but sample papers. Actual scoring guide packages, which have been field-tested and used, are appended to the essay by Lloyd-Jones (1977).

Step Seven: Actual Scoring

Each writing sample is graded by two scorers. In the event of a discrepancy, a third scorer grades the sample.

Some Practical Considerations in the Use of Primary Trait Scoring

The Cost of Test Development

Lloyd-Jones (1977) estimates that it takes between 60 and 80 hours for a professional to develop each exercise/scoring guide. For the proposed test, it is likely that the scoring guides, with minor modifications, could be used with a variety of stimuli (e.g., several different maps for the exercise presented in Appendix A), and thus minimize the cost of development by producing several parallel items. Traditional notions of test secrecy do not apply, since by simply switching the stimuli, the writing task is dramatically altered.

The Cost of Scoring

Although Primary Trait Scoring has been used in a wide scale assessment (the National Assessment of Educational Progress), it has not, to our knowledge, been implemented anywhere on an on-going basis. For this reason, scoring costs cannot be predicted with any degree of confidence.

The experts we contacted gave estimates of from $1.50 to $2.00 to grade a subtest consisting of three 20-minute writing samples, each being scored by two scorers. This estimate is based on tests being scored in a centralized location, and by scorers hired on a per diem basis. Naturally, with a large volume of tests, the unit cost could be substantially decreased.

"Turnaround time for scoring could not match machine scorable tests." Therefore, it is recommended that the writing sample test be used as a prerequisite for taking the remainder of the test.

As editing skills are important in their own right, a separate editing skills examination should be developed. However, such a test result should be weighted to account for no more than 10-20% of the total writing assessment.

Reliability

The literature regarding *a priori* prediction of reliability for holistic tests is virtually non-existent. A target reliabilty of .80 to .85 has been set for this subtest.

Test Length and Timing

It is suggested that the subtest consist of three distinct writing tasks: one formal letter, one informal note, and one set of written directions.

The test should not be timed.

Diagnostic Information

Score reports should include the brief coded description of any writing problem, as it appears in the scoring guide in Appendix H.

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PART III

Section 5

APPLIED PROBLEM SOLVING SUBTEST

Introduction

In each of the three previously described subtests, the intent was to measure specific skills in relative isolation. We attempted to test mathematical skills independent of reading skills, etc. In this, the applied problem solving subtest, our intent is to asses the adult's ability to apply all of these skills to the solution of common problems. Since this application of skills to the solution of real-life problems represents the most ecologically valid assessment of adult proficiency, we regard the applied-problem solving subtest as the heart of the entire examination.

There is no parallel to this subtest in the GED. While a few practical items were introduced into the reading subtest of the GED, most of the items assess problem solving in an academic context. This subtest will represent the most significant departure from the GED concept of high school equivalency testing.

Basic Design Characteristics

The selection and/or development of items for this subtest will be governed by two major characteristics. First, all items must meet the criteria of ecological validity described in the general design factors, and second, all items must be in multiple choice format. The requirement that all items be multiple choice somewhat limits the extent to which problems can be presented in a truly ecologically valid manner. In real life, adults are seldom called upon to select from four or five alternatives. Nonetheless, every effort should be made to present problems in the manner that they are encountered in real life situations.

The types of problems that are envisioned in this subtest of the examination include the following:

1) Enter data into correct locations on forms such as tax forms, social security forms, and job applications.

2) Use indexes and tables of contents to locate information in a reference publication.

3) Extract required information from tables and charts.

4) Compute taxes from information normally available to the taxpaying citizen.

5) Estimate carrying charges on short term installment contracts or charge card purchases.

6) Correctly fill out forms used in banking transactions.

7) Fill out a family budget given information on routine expenses.

8) Interpret safety and health warnings.

9) Read and follow instructions for voting, etc.

Any problem might include more than one function for its proper solution. For example, the examinee might be required to locate a chart providing tax information, extract the correct information, place it in the correct place on a tax form, follow instructions for calculating the tax and perform the necessary mathematical calculations. In designing items, particularly in mathematics, developers should avoid the types of common problems identified by Willoughby and cited in the previous section on mathematics.

Technical Specifications

This subtest should be designed so that 95% of examinees can complete it within two hours working at their preferred rate. All items will be multiple choice in format, and all distractors should be selected so as to provide diagnosis of common errors. Examinees will be expected to achieve a mastery level of 85% correct on the subtest to achieve a passing score. Items will be designed to avoid negative age bias or any racial or sex biases.

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Appendix A

State of New Jersey

DEPARTMENT OF EDUCATION

BUREAU OF ADULT, CONTINUING, COMMUNITY EDUCATION
3535 QUAKERBRIDGE ROAD
P.O. BOX 3181
TRENTON, NEW JERSEY 08619

DIVISION OF SCHOOL PROGRAMS

February 20, 1981

Dear Colleague:

As you may know the Center for Adult Development at Rutgers University has a research and development grant to design specifications for a New Jersey test of high school equivalence. Such a test would be an alternative to the GED, not a replacement. It would still meet or exceed those skill performance standards expected of graduating high school seniors. The project staff needs to know what strengths and weaknesses there are in the current GED test and what skills really should be taught in a high school equivalency program.

I believe that there is no one in this State better qualified to levy criticism of the GED and make recommendations for our own test than you and your colleagues teaching Adult Basic Skills.

I emplore you to put your feelings in writing and send them to Thomas Valentine, Rutgers University Center for Adult Development, 10 Seminary Place, New Brunswick, New Jersey 08903 or me.

Please be assured that your comments will be kept confidential, if you wish them to be, and that your recommendations will be a key element in the design of the test.

If you wish to involve students or graduates in this process, please do so.

Very truly yours,

W. S. Hauck, Jr.
Director
Office of High School Completion

WSH:mew
cc: Glassboro AERC
Jersey City AERC
Montclair AERC
Trenton AERC
Thomas Valentine

Appendix B
RUTGERS UNIVERSITY
SECONDARY LEVEL ADULT PROFICIENCY PROJECT
GED STUDENT INTERVIEW

Interviewer: #______
Date: G______
Site: X______
Student Name: R______

1. a) Which school did you attend? ______________________________
   b) What was the last grade you completed? __________
   c) What year did you leave school? ____________
   d) How were your grades before you left school? ____________________
   e) What are you doing now? (occupationally; educationally)

2. Why did you leave school?

3. Do you feel that not having a high school diploma (i.e., certification) made your life more difficult in any way? How?

4. Do you feel that not having a high school education (i.e., learning) made your life more difficult in any way? How?

5. a) How and when did you find out about the GED test?

   b) How and when did you find out about GED classes?

***(If the student has not taken the test, skip to question 9.)

6. a) When and where did you take the GED test?

   b) Did you pass the test? ________

   c) Do you remember your scores? If yes, what were they? If no, do you remember which subtest you scored highest in? Lowest?

   d) Have you ever taken the test before?

7. a) What were the most important things you had to know in order to pass the test?

7. b) Do you use these things in your everyday life? How?

   c) What subtest gave you the most trouble? Why?

   d) What were the kinds of questions that gave you the most trouble?

   e) Did you have any trouble finishing the test within the given time?

   f) Did you find the test booklet confusing?

   g) Did you find the answer sheet confusing?

   h) Was there anything else that made the test especially hard for you?

   i) Overall, would you say that the GED test was a fair way to measure your abilities?

8. a) Did you take classes to prepare for the GED? ________

   b) When and where? ____

   c) How long did you attend these classes? ___________________________

   d) What did you do for money while you were attending these classes? (work? paid instruction? supported by others?)

   e) What things did they teach you in your GED classes? (reading? math? writing? science? social studies? test-wiseness?)

   f) Do you use these things in your everyday life? How?

   g) What is the most useful thing you've learned, either in school or in GED classes?

   h) What is the least useful thing you've learned, either in school or in GED classes?

***(If the student has taken the test, skip to question 11.)

9. a) Where are you currently taking GED classes?___________________________

   b) How long ago did you start taking classes? ____________________________

9. c) Have you ever taken ABE or GED classes anywhere else? Where and when?

d) Did you ever try preparing for the test on your own, before you started taking classes? (Or studied reading or math at home?)

e) When do you think you'll be ready to take the test? How do you know?

f) What are you doing for money while you prepare for the GED test? (work? paid instruction? supported by others?)

g) What things are you learning in your GED classes? (reading? math? writing? science? social studies? test-wiseness?

h) Can you use these things in your everyday life? How?

i) What is the most useful thing you've learned, either in school or in GED classes?

j) What is the least useful thing you've learned, either in school of in GED classes?

10. a) How much do you know about the actual GED test? How do you know this?

b) Have you seen or taken the GED sample test? When? (If the answer is no, skip to question 11.)

c) If you took the sample test, how did you do?

d) What things did you have to know to do well on the sample test?

e) Is it important for a person to know these things in order to succeed in life?

f) Based on the sample test, what subtest do you think you'll have the most trouble on the actual test?

g) What were the kinds of questions that gave you the most trouble?

h) Did they time the sample test? If so, did you have any trouble finishing?

10. i) Did you find the test booklet confusing?

    j) Did you find the answer sheet confusing?

    k) Was there anything else that made the sample test especially hard for you?

    l) Overall, would you say that the sample test was a fair way to measure your abilities?

*** (The remaining questions are for everyone.)

11. Why is it important to have a high school diploma?

12. Which do you think is more important for success in life: having a high school diploma (i.e., certification) or knowing the things that they teach in school and/or GED classes (i.e., learning)? Why?

13. In general, do people treat high school graduates differently than they treat high school drop outs? How?

14. Do you think there is any difference between people who graduate from regular high school and people who get their GED diploma? Explain.

15. There are high schools designed especially for adults. Do you think that they should teach the same things as high schools designed for teenagers?

16. If you were to go back to school now, what things would you want to learn?

17. Is there anything else you'd like to say:
    a) about your high school?

    b) about your GED classes?

    c) about the GED test?

Appendix B
RUTGERS UNIVERSITY
SECONDARY LEVEL ADULT PROFICIENCY PROJECT
EMPLOYER INTERVIEW

1. What kinds of entry-level employment do you offer?

2. Do you provide training programs for entry-level employees? What kinds?

3. Are there any jobs/training for which a high school diploma is generally required?

   Do you make any exceptions to this policy? If yes, please explain.

4. Are there any jobs/training for which a high school diploma is preferred but not required?

5. Is a high school diploma a factor in being promoted?

6. Do you make a distinction between traditional high school graduates and G.E.D. graduates with regard to placement into jobs or training?

7. What differencces, if any, do you think there are between job applicants or employees with traditional high school diplomas and G.E.D. diplomas?

8. Do you think the G.E.D. test is a good predictor of an employee's performance on the job?

9. Do you think it tests the things a high school equivalency exam should test? (i.e., reading, math, science, social studies, etc.)

10. If the G.E.D. were changed to assess the functional skills required in adult life rather than purely academic skills, would that be of concern to you in any way?

11. What skills do you generally look for in entry-level personnel?

12. Do you require the applicant to have specific skills in reading, math, or writing? What about speaking and listening?

    Which are most important?

13. How do you know if a person has these skills?

14. How much importance do you place on a worker's educational skills compared to a worker's attitude?

15. Do you administer any tests to your applicants for entry-level jobs? If yes, please explain.

APPENDIX B
RUTGERS UNIVERSITY
SECONDARY LEVEL ADULT PROFICIENCY PROJECT
SECONDARY PRINCIPAL INTERVIEWS

1. Under what circumstances are your students allowed to take the GED test?

2. By whom is this decision made?

3. Does the GED testing-out option have any effects on student attitudes in your school? On marginal students?

4. Does the testing-out option have any long range implications for secondary education?

5. Do you have any programs for marginal students?

6. Would an alternative to the GED emphasizing adult functional competencies have any effect on high schools?

7. What are the most important skills high school students should have when they graduate?

8. What changes, if any, would you like to see in the high school curriculum?

9. How well does high school equip youth with "life skills" as opposed to purely academic knowledge? Should high schools attempt to do both?

10. In general, are there any common characteristics you associate with dropouts? Differences between older and younger dropouts?

11. What does "secondary level proficiency" mean to you?

12. Should adults studying for high school certification be required to study the same subjects as adolescent high school students?

13. Do you see any changes in curricular patterns regarding the relative importance of academic knowledge vs. life skills?

14. Do you foresee the new State graduation requirements having any effect on your school?

APPENDIX B
RUTGERS UNIVERSITY
SECONDARY LEVEL ADULT PROFICIENCY PROJECT
TEACHER INTERVIEWS

1. Have you ever seen or taken the new GED test?

2. What skills or knowledge do you think the GED test measures?

3. Which of these does it test well and which does it test poorly?

4. Does the GED measure the things a high school equivalency test should measure? (a) for recent dropouts? (b) adults out of school 10 years or more? Why?

5. In preparing students for the GED, what topics do you stress most? (test-wiseness, reading, math, content areas)

6. What do your students think of the GED test? (fair, hard, academic, etc.)

7. What are the main problems students have in preparing for the test? (skill deficits, motivations, etc.)

8. Do some groups have more problems than others? (older, less intelligent, poor readers, less schooling) What are they?

9. Is the fact the test is timed a problem for some students? Which ones?

10. Roughly what percentage of your students are motivated to learn or improve their skills for reasons other than, or in addition to, passing the GED? What are these reasons?

11. What do you think the concept of "equivalency" should mean? (= to high school senior performance; = to adult high school graduate performance; = to traditional high school curriculum; an equivalent but different adult curriculum)

12. Should a high school equivalency test emphasize the traditional academic subjects, or skills and knowledge more closely related to the requirements of adult life? Why? What requirements?

13. Basic reading and computational skills aside, what two or three high school subjects are most important for all adults to know? Why? (algebra, history, science, civics, home economics)

14. What commercial materials have you found most useful in preparing your students for the GED test?

Appendix C

ABE/GED STAFF SURVEY

In response to concerns expressed by New Jersey adult educators regarding the current GED's appropriateness for many adults, the State of New Jersey has asked Rutgers to investigate the need and demand for another high school equivalency test for New Jersey adults. Our preliminary investigation found that the GED is a reasonably well designed test of high school academic ability. However, due to its content, it tends to be somewhat biased in favor of recent dropouts and younger adults.

Based on the comments of a limited number of GED students and teachers, we have developed some ideas for a new test, which we believe addresses many of the problems expressed in our initial interviews. We are at the point where we need reactions and comments from a broader representation of professionals in the field.

We would like you to review the technical specifications provided and complete the following questionnaire. Please return this questionnaire at the workshop or mail it to the following address:

Gordon Larson
Center for Adult Development
Rutgers University
10 Seminary Place
New Brunswick, NJ 08903

- -

BACKGROUND INFORMATION

1. What is your primary role in ABE/GED?
   _____ Teacher/Facilitator   Subject(s): ____________________
   _____ Counselor
   _____ Administrator
   _____ Other

2. Is your program located in

   _____ North Jersey   _____ Central Jersey   _____ South Jersey

3. How long have you been involved with ABE/GED instruction? _____ years

4. Have you ever read or studied the GED practice test published by the GED Testing Service?
   _____ Yes   _____ No

5. Are you familiar with the content of the GED? _____ Yes   _____ No

6. Have you received information on the proposed alternative test?

   _____ Yes   _____ No

PART A: Desirability of An Alternative Test

1. Do you believe the current GED test meets the needs of all or nearly all adults who want to complete high school through a testing option?

_____ Yes _____ No Comments:

2. Do you believe the content of the current GED test provides appropriate goals for basic skills instruction for adults?

_____ Yes _____ No Comments:

3. Do you believe there will be a reasonable demand for a second (alternative) test of high school proficiency based on skills and knowledge required in adult life?

_____ Yes _____ No Comments:

4. Do you believe it is appropriate for the State of New Jersey to have its own test of high school equivalency?

_____ Yes _____ No Explain:

5. Do you believe that providing a second test option would be desirable from

a. a student's perspective _____ Yes _____ No
b. a teacher's perspective _____ Yes _____ No
c. your own perspective, if different from above. _____ Yes _____ No
Comments:

PART B: Basic Test Design Factors

Assuming that a second test were developed

1. Do you feel that it should be more adult oriented than the GED?

   _____ Yes _____ No Comments:

2. Do you think a second test should place less emphasis on discrete knowledge items and more emphasis on transferable skills such as reading, writing and math than the current GED does?

   _____ Yes _____ No Comments:

3. Do you think the alternative test should be criterion or norm-referenced?

   _____ Criterion-referenced (demonstrate a high level of proficiency on specified skills)
   _____ Norm-referenced (performance compared to a norm group of high school seniors)
   _____ No opinion
   Comments:

4. Would you like the test design and scoring procedures to provide diagnostic information:

   _____ Yes _____ No Comments:

5. Do you believe that the criteria of ecological validity described in the technical specifications are appropriate?

   _____ Yes _____ No Comments:

PART C: Content and Format

We are proposing that the test consist of four subtests: 1) reading ability, 2) math ability, 3) writing ability, and 4) applied problem solving.

1. Is this basic format suitable:

_____ Yes _____ No If not, what would you change:

2. Should the writing subtest require actual writing of short passages such as found in forms, business letters, and notes?

_____ Yes _____ No Comments:

3. Could the writing subtest be administered separately at the local level prior to taking the rest of the test?

_____ Yes _____ No Comments:

4. Should reading passages selected for the test be drawn from materials published for general adult public consumption?

_____ Yes _____ No Comments: (Please suggest materials to be considered)

PART D: Additional Comments

Appendix D

ABE/GED STAFF SURVEY

Responses & Comments

PART A: Desirability of an Alternative Test

Question #1:

Do you believe the current GED test meets the needs of all or nearly all adults who want to complete high school through a testing option?

_______ yes _______ no _______ no response

Comments from those responding yes:

"If a person passes the GED, for most it has served the purpose. From an instructor's viewpoint, the test has a lot of holes in it."

"Most students only want to study what is on the test and are not interested in what might help them in life."

"Feel certain sections not too relevant. i.e., poetry and poetry interpretation."

"Writing must be part of it."

"If you are to maintain that the GED is equivalent then its imperative to keep the criteria similar (If not, differientiate between the 2 diplomas)."

"Obviously, individual test items can be improved - There should be a better means of feed-back from testees, adult educators, etc."

"I believe the test should be expanded/modified towards more applied topics."

Comments from those responding no:

"I feel the test is defunct. I believe the test should be revamped."

"Although the adult students learn the mechanics of the English language, they are not given the opportunity to provide a writing sample for the GED test."

"Too content oriented rather than on skills needed to process information."

"I believe that there are many adults who could benefit from another alternative."

"No test will ever meet all needs of students. However we should always try to improve."

"I agree the present GED test is biased toward the recent high school drop-out."

Question #1 cont.

"Writing."

"Test assesses knowledge & skills in subject matter taught through high school."

"Norm-referenced tests of adult basic skills does not seem appropriate."

"The tests are written at an higher than my student level."

"Test is too easy, not all high school skills are covered."

"That goal is nearly impossible."

"There should be more 'computation' problems than 'word' problems."

"Entirely too many word problems. Too much ' unnecessary' math for adults."

"Not enough warranting instruction for social studies & science."

"The test seems to tap only a few skills e.g. test taking, visual discrimination, reading, endurance etc."

"Too difficult in some areas, not enough information required in others."

"I feel that many if not all of my students are not academically inclined and therefore the present GED test does not fit their needs."

"My families average a 4th grade education. Therefore the current GED is of no use to them."

"Doesn't test basic skills."

"We at our learning center believe the present GED could be modified to do so."

"I do not like the concept of the 'prior' knowledge question."

"The math section is beyond their needs for everyday living."

"Different level of competency relating to vocational vs college prep has not been considered."

"Too much influence placed upon advanced math and science skiils & discrete areas."

"I think a writing sample should be included."

Comments from those not responding:

"It's good for the younger students - newly out of school."

"Since current GED is not available I cannot comment or decide."

"The greater majority yes."

"I don't know the test well enough to determine."

"I feel the adults want to complete high school through testing are mainly interested in what the completion of the GED will mean to them - i.e. - better job, chance to further education, self-satisfaction."

"Loaded question; no one test meets the needs of any person. Multiple measurements are more appropriate."

Question #2:

Do you believe the content of the current GED test provides appropriate goals for basic skills instruction for adults?

_______ yes _______ no _______ no response

Comments from those responding yes:

"I have never seen a copy of any form - only example or excerpts."

"Some of the math questions are algebra & geometry - basic??"

"Only if prepared for students - adult learners."

Comments from those responding no:

"Test does not focus on basic skills."

"Not all of the content provides for such, especially the science areas. It may recognize reading comprehension ability, but the content is not useful or relevant."

"Basic skills to me refers to simple computations of whole numbers, decimals, fractions, and percents."

"Most feel test provides no information for real life."

"Needs basic skills in living skill area."

"There seems to be an imbalance where basic skills is concerned."

"As an equivalent of high school, the reading level is not high enough on the test."

"Content is not what the adults in our program have or will need to read."

"A good part of the practice GED test is irrelevant."

"A good percentage of the test seems to be based on facts, rather than skills and applications."

"Basic should not be the goal."

"Not appropriate for adult life coping needs."

"Test is too easy, not all high school skills are covered."

"'Word' problems are not a basic skill. Straight forward computation problems would be better."

"It goes 'overboard' - yes, the basic skills requirements is fine; it is the 'extras' of algebra and geometry that I'm concerned about. Some geometry & algebra should be asked, but not a great deal. More emphasis should be on 'survival skills,' 'daily living' for adults."

"No, and I find little motivation for a rehash of high school failures."

"Too much left to prior knowledge rather than on reading & comprehension ability."

"How can it - without a writing sample."

Comments from those not responding:

"Never seen it."

"It goes into more than I would call basic skills."

"Deals primarily on mastery of skills with very little concept & application."

"Since current GED is not available I cannot comment or decide."

"The goal of the test appears to be the reception of a diploma."

"Possibly not."

Question #3:

Do you believe there will be a reasonable demand for a second (alternative) test of high school proficiency based on skills and knowledge required in adult life?

_______ yes _______ no _______ no response

Comments from those responding yes:

"Alternatives are always worthwhile."

"If properly 'sold' to and by adult educators."

"Not should be available for anyone under 18. No waiver."

"Yes, the present test is geared to college entry, as is most of high school work."

"There should be different tests for people who are 'college bound.'"

"The know approach is Application of Knowledge rather than the Mechanics of Operations."

"Similar to M.B.S. test."

"For those away from school for a long period of time."

"The test should not be lowered in knowledge or skills required for adult living, but it could be developed to stress problem-solving skills needed in relevant adult living."

"Once students compare both tests they will prefer the alternative."

"A test that is less academic and related to real life skill should be prepared."

"Based on my experiences I believe that many adults would be helped if we were able to offer another alternative."

"Our standards are lower."

"But key word is alternative."

"There is a definite need for an alternate test."

"Yes: if its reciprocal value is the same or better than the present GED. No: if its going to confuse the issue with students."

Comments from those responding no:

"Bias will be problem."

"For most people, it will be too confusing for 2 tests to be offered. They will want to know which is easier, accepted in more places and administered closer to home."

Comments from those not responding:

"I don't know."

"Generally, bringing about change or even introducing alternatives meet with apathy. An alternative implies lack of satisfaction with what is - either strive to replace or forget it."

"Probably not."

"Great influx of younger students may prove the 'old' GED is still the best."

Question #4:

Do you believe it is appropriate for the State of New Jersey to have its own test of high school equivalency?

_______ yes _______ no _______ no response

Comments from those responding yes:

"It would correlate with M.B.S. from New Jersey."

"As long as it is acceptable by other states."

"Alternative high school equivalency test--yes, as long as the student is offered the choice of the current GED test or the alternate test."

"Yes, the State now has a criteria for a standard diploma."

"Since regular high school students need to pass M.B.S, then adults should also need to do so. But other criteria should be required - one test is not enough."

"Yes, since high school diplomas are accepted nationally, this test should be treated in the same manner."

"Certain skills may not be necessary for the area or the reason for taken the test."

"I believe that the more we can do to provide programs, alternatives, experience etc will certainly benefit the State and the Nation."

"But again as state above - alternative. However even as an alternative it may have a certain stigma attached."

"If the NJ Board of Ed issues a diploma/certificate - yes."

"It would be more specifically geared to our students in this unique area."

"Although we should rethink what we would like to attain by receiving a high school diploma."

"If it is accepted and recognized by other states in the event a student relocates in future years."

"Minimum Basic Skills Test and an alternate test based on a adult performance level test."

"If such a test would receive some reciprocity with other states."

"Needs of various areas differ accordinly."

"Possibly - to meet the specific needs of NJ residents."

"As long as regular GED remains."

"As long as states and work agencies accept it."

"There should be standard set for a high school equivalency similar to the existing GED."

"A more meaningful test would discourage less people."

Comments from those responding no:

"Test scores may not be accepted in other states."

"This test should continue to be set up on national norms if the equivalency is to have national value."

"Suppose you were in the Armed Forces - how would you compare from state to state ('has a high school diploma - diploma means nothing in this state')."

"At this point, I see confusion on the part of instructors and students. Also, would an alternative GED be accepted by employers and colleges here in NJ only or out of state, too?"

"This may cause problems for other states to accept the H.S. certificate. The equivalency should be recognized nationwide."

"It might be better for some of the people. Then the question will arise - Which school test is more valid, or easier or more widely accepted?"

"What if other states do not recognize NJ's high school equivalency tests scores."

"I don't think it would be fair for only NJ to offer. Should be re-done nationally."

"I believe in unification of test through out 50 states."

"It should be on a national scale."

"Since a great deal of our population is transient, a New Jersey test will have to be recognized in the other 49 states. I don't believe this could be a reality."

"Because of economic factors."

"I'm not convinced of the need or efficacy of an N.J. Test."

"Should be uniform throughout the states I feel."

"Why is it necessary?"

"This is not necessary."

"As a state we should not have special test, but we should provide specific and special guides for adult students with learning disabilities."

"As it now exists, the GED is recognized over all the states but a state test might not be accepted by other states."

Comments from those not responding:

"For what purpose? Do we not accept GED diplomas nationally? Are there sectional differences in regard to basic skills? I think not!"

"Only if the New Jersey test has the same acceptance as the present test with colleges, employers, out-of-state schools, the military, etc."

"I'm still debating this question. What if other states refuse to honor it."

Question #5:

Do you believe that providing a second test option would be desirable from

a. a student's perspective _____ yes _____ no _____ no response

b. a teacher's perspective _____ yes _____ no _____ no response

c. your own perspective, if different from above _____ yes _____ no _____ no response

Favorable responses and comments:

"A better test will be an Amen for both teacher and student."

"Yes, a student has a chance to indicate skill in more than academic areas. A teacher will have less pressure to stress only academic application of instruction."

"From the counselors' perspective - the more alternatives we can offer a client the better off the client is & the client can then make a decision based on the advantages & disadvantages of the various choices."

"Most students would probably prefer less 'word' problems & more computation skills."

"If a student recognizes that learning is more than books and can be kept from being 'turned off' especially since he is an adult learning supposedly high school material, their interest and motivation is higher and the role and job of the teacher is reachable."

"Allow for individual educational and personal difference!"

"Students can take the most appropriate test for them."

"We must recognize that some adults have been out of school for years."

Unfavorable responses and comments:

"There are already many options available-- e.g. Adult H.S. Although there are problems with the present forms of the test - the philosophy behind the test is sound - I believe we should not throw out this 'baby' with the 'bathwater.'"

"It would only serve to confuse the number of choices for the student. In most instances the decision to prepare for the test has been a major traumatic event in their lives."

"I believe, the current test should be revised, however the possibility of a second test is not desirable. If two tests are offered, people will question the credibility of both tests."

Mixed responses and/or qualified comments:

"May be difficult to change a lot of adult educators' perspective, as criterion-referenced measures are more difficult to develop/implement/ evaluate."

"Measure elements of the GED that are and are not being covered."

"Unless it was easier to pass- but then its effectiveness would be diminished. Learning when it is related to daily needs of adults, tends to occur faster and internalized for a longer time. Therefore, a test related to basic adult living might have a greater, longer range (longer time frame) effect then the current test."

"The same way we set standards for our "conventional high school student' I feel we should set standards for the GED student."

"Maybe it would be easier."

"Don't think students really care."

"I question the need for an alternative. I am not convinced that a certain academic proficiency in irrelevant areas is not a desirable goal. Elitism is a fact & a high school diploma should indicate elitism not just a common practical knowledge!"

"The major debate of course will be that the test is being designed to 'accomodate' the student; i.e., a lowering of standards."

"But simply passing a test (the one proposed) should not allow an adult to obtain a GED. Certain required courses beyond minimums need to be initiated."

PART B: Basic Test Design Factors

Question #1:

Do you feel that it should be more adult oriented than the GED?

_______ yes _______ no _______ no response

Comments from those responding yes:

"An education is supposedly a means of providing young people with the necessary tools to function and cope as adults, in a changing world or society."

"Clarify adult oriented."

"You have stated so."

"Since adults are mostly in our enrollments."

"Yes, this diploma is an entry to the mainstream of life. An adult oriented test will allow more people to prove expertise in society."

"The test should be relevent for the adult learner."

"People would feel more relaxed dealing with 'everyday' problems (familiar problems -- less tension)."

"Be aware though that adult does include those people who are school age and have a variety of interests."

"Present GED too, structured toward a 'high school mentality.'"

"The test should reflect the real adult world and the problems which contront adults."

"What do you mean? Are you saying that the current test is oriented towards children & young adults. Taking the question at face value of course the alternative test should reflect adult activities - otherwise what would be the purpose of a second test."

Comments from those responding no:

"If the test measures high school equivalency, then it should be equivalent to what a high school graduate needs to know."

"Should be difficult! Should truly reflect the knowledge a graduating senior should have."

Comments from those not responding:

"The greater majority yes."

"Do not fully know what you are implying by 'more adult oriented."

"What does adult oriented really mean?"

"It should depend on the student's circumstances whether or not school has been a recent experience."

"Another loaded question - I can see that your convinced that the present GED is not appropriately adult oriented."

"How much do you feel the GED test is now adult oriented?

"Isn't the GED adult oriented?"

Question #2:

Do you think a second test should place less emphasis on discrete knowledge items and more emphasis on transferable skills such as reading, writing, and math than the current GED does?

_______ yes _______ no _______ no response

Comments from those responding yes:

"Except there are relatively few discrete items on the present GED."

"Writing is very important."

"For older persons who have lost a great deal of knowledge it seems reasonable."

"Discrete items cannot be taught due to time factor. Leads to guessing which is worthless when testing should be based on skills."

"I feel that discrete items are empty questions which were origianlly written in to take up thinking time on the test."

"What reading level would the test be on?"

"Depending on the purpose - seperate college bound versus non-college bound as in high school."

"In a prep course the adult could work to improve his/her skills & then be prepared to take the test."

"This test is necessary for non-college bound adults to demonstrate mastery of a certain level of a set subject areas."

"Math application are most important - we need basic skills to solve pre-application examples."

"As long as the transferable skills are practical life coping skills needed by adults to function in today's society."

"However, just as discrete knowledge is objectionable because it requires the student just to do a lot of memorizing, the inclusion of testing adult skills which will be obsolete in a few years is just as objectionable."

"Discrete items, especially science, discriminate against those who attended school 15-20 years or more ago."

Comments from those responding no:

"Discrete items were inserted to shorten the test, now you propose to lengthen it. I think the writing sample is a good idea but it should also be applied to HS students. Many people graduate our high schools without being able to read & write."

Question #2 cont.

Comments from those not responding:

"It depends on the reason why the adult is seeking to get a GED."

"I think there should be a balance of general knowledge items and developmental skills."

Question #3:

Do you think the alternative test should be criterion or norm-referenced?

_______Criterion-referenced (demonstrate a high level of proficiency on specificed skills)

_______Norm-referenced (performance compared to a norm group of high school seniors)

_______No opinion

_______No response

Comments from those responding "criterion-referenced":

"Again, this depends on the acceptance of the test."

"Allow for adult differences in the experiences."

"So long as the reference is promulgated to the public, those who will use the results: e.g. employers, schools, licensing agencies, etc."

"Adult are little concerned with how they rate against last year's h.s. seniors."

"As long as specified skills used are appropriate to adult needs."

"Students are completely confused by the scores on the test. 'Why is 45 considered a good score - I only got half right?' is a typical response."

Comments from those responding "norm-referenced":

"It would not be fair if it were criterion-referenced. Actually I believe we should have criterion-referenced exams to graduate normal H.S."

"If you propose a criterion reference test, how would you determine the standard? Arbitrarily? The present MBS test is not norm referenced and not a very good criterion referenced test."

Comments from those not responding:

"Perhaps the test should be based on the needs of the students - the length of time since last being in school."

"Since I am not a test designer, I will ask the question - why can't a test be both? It could test specified skills and then be normed on a general adult population. It would show that those adults who passed could perform at a high school level. Those who couldn't pass could not perform at such a level."

Question #4.

Would you like the test design and scoring procedures to provide diagnostic information?

_______ yes _______ no

Comments from those responding yes:

"This would be of great help to the teacher in preparing students to obtain their diploma and also help remediation of the student."

"For failures."

"G.E.D. test does not show deficiences."

"Lack of knowledge should be indicated by wrong responses."

"Definitely."

"Breakdown of strengths and weaknesses in case student needs further preparation."

"The time to teach students is in a classroom setting to determine their weak points or an exam with an eye to further prep is good."

"But return scores sooner than now."

"It would be beneficial to advise a failing student what his/her weaknesses are."

"A criterion-reference test would easily lend itself as a dianostic instrument."

"Would allow for future changes & needs."

"Why not if it could be used by the test-taker and adult educator."

"Yes, I presently have 10 or more H.S. grads, unable to maintain a job which require basic math. It would be a great help to them to take this test just to find out what they still need."

"Someone who fails the test would have some realistic goals to study for the retest."

"This could be used to help us determine what we should or shouldn't teach and how to better our teaching procedures - also should the student his or her mistakes and weaknesses."

"It would be nice but it is not a necessity."

"If the student is not successful the diagnostic information would be very helpful."

"This would be a tremendous aid to students and teachers."

Comments from those responding no:

"Don't think it's needed in math/grammar, writing, reading. Most centers have own diagnostic test."

"Social pressure may be too much."

"Most of the people who take the test are concerned about passing it. If they do, they don't become concerned with why they passed. Those that fail may not take it again for awhile."

"Too much social pressure attached to diagnostic information."

"Is not the test design different for a diagnostic tool/entrance skill evaluation and an exit skill/proficiency skill level??"

"I want to make a decision about the appropriateness of conferring a high school diploma not diagnostic information. There are plenty of good diagnostic instruments available."

Question #5.

"Do you believe that the criteria of ecological validity described in the technical specifications are appropriate?

_______ yes _______ no _______ no response

Comments from those responding yes:

"This criteria does cover the concern for helping adults to perform in an effective manner - at work or in social situations."

"If there are English measurement conversions there should also be metric- we are eventually going to go metric.

"But not necessary."

"Definition of ecological validity is non-descript and without direction."

"For non-college bound."

Comments from those responding no:

"I believe you have not specifically described and defined 'ecological validity.'"

"I love your new term. What does it mean? Could you mean that there really is a generation gap?"

Comments from those not responding:

"What?"

"This question needs clarification. I don't understand it."

"Maybe."

"Not clear as to the target population's needs."

"Unable to answer."

"Generally yes!"

"I don't understand this question."

"Unable to answer - because I have not seen technical specification."

"This question makes no sense."

"I am not convinced."

"I have never seen the tech spec."

"Keep it simple - what do you mean?"

PART C: Content and Format

We are proposing that the test consist of four subtests: 1) reading ability, 2) math ability, 3) writing ability, and 4) applied problem solving.

Question #1:

Is this basic format suitable?

_______ yes _______ no _______ no response

Comments from those responding yes:

"Reading ability could be the 3 reading sections currently given combined into one section. Applied problem solving - does this refer to life situations on math or both."

"Providing that it is not strictly a basic skills test - I would like to see a coverage of broader scope - i.e. teaching is geared to testing."

"Math ability & applied problem solving should be one test, not two."

"It sounds reasonable."

"No, ecological validity? Oh my!"

"Again, another question that infers you've already made up your mind about an alternative test."

"Yes, if the number of items in each area increased in number."

Comments from those responding no:

"Sounds good but if it is only mathematical problems, then make it part of math ability."

"If applied problem solving is to be related to reading & math, then incorporate into these sections."

"If the GED equivalency diploma is supposed to be equal then the present format seems to be more appropriate."

"Only if it applied to the mechanics of writing and not the creativity."

"Add other areas of academics."

"Social studies and sciences are needed."

"A little science (basic facts) and U.S. history should be included."

"Test still is primarily multiple choice, does not allow for oral response, critical thinking, creativity, adaptive skills or talents not measured by the aforementioned subtest."

"Problem solving in an applied sense is unfair to those students with below average intelligence."

Comments from those not responding:

"I'm not sure about the writing ability - it seems hard to measure and evaluate."

Question #2:

Should the writing subtest require actual writing of short passages such as found in forms, business letters and notes?

_______ yes _______ no _______ no response

Comments from those responding yes:

"This current test allows for guessing to a great extent."

"Very strongly."

"Not writing paragraphs, but to be able to complete forms, applications, etc."

"This is practical and many adults don't know the skills in this."

"Holistically evaluated."

"Many times people must be able to write a paragraph on an application."

"Regardless of the life situation an individual must encounter at least one of these types of writing."

"Absolutely beneficial."

"And more!"

"But how would it be scored."

"Writing skills can prepare individuals to properly and successfully complete applications and test for job opportunities."

"Being able to correct an error in something already written is easier than writing your own. If a person can do one it doesn't mean they can do the other."

"The students need to know how to form ideas."

"Also, selection of sentences, grammatically correct from 4 choices."

"Also a paragraph describing a picture."

"Only if mechanics are taken into account."

"The present G.E.D. test does not measure writing ability - just grammar and usage. There's a big difference."

"From practical standpoint, but who would have the patience to score objectively?"

"Yes, because there is a high correlation between reading & writing & also I feel writing is a necessary survival skill."

"My first though is who would correct such a subjective item. I do feel it's something that is necessary."

Comments from those responding no:

"I'd like to see something on completing forms & applications - but not writing short passages. Possibly credit applications or tax returns, etc."

"How would this be scored? This could possibly become an opinion graded test."

"I feel this should be part of the GED preparation curriculum."

"We should avoid formality."

"This is too difficult and to costly to correct." Your idea is too idealistic but not realistic."

Comments from those not responding:

"Difficult to evaluate!"

"I don't know. Some of the best minds in the country are trying to assess writing skills."

Question #3:

Could the writing subtest be administered separately at the local level prior to taking the rest of the test?

_______ yes _______ no _______ no response

Comments from those responding yes:

"If provisions are made in funding of programs which use this format."

"If appropriate arrangements are made."

"Provided the person correcting the subtest be qualified to do so and all persons thus involved meet certain guidelines to do so."

"Writing requires 'quiet thinking time' and if a person is testing, I feel their anxiety level would be high enough to interfere with their writing skills."

"This could help to speed-up the administration of the remainder of the test."

"I feel the test should be administered by an independent person, divorced from the teaching program."

"How would this effect their validity?"

"For accuracy levels of comprehension."

"If the local people know what they are doing."

"Cost factor."

"Possibly."

"This would be a good indication of their ability to handle the rest of the test."

"Probably would be most practical for (1) correction, (2) time span for results."

"As long as the writing subtest is submitted for a holistic evaluation."

Comments from those responding no:

"I don't feel there are enough qualified people."

"If the writing test was scored at the local level then the results of the test could come under suspicion."

"There must be a firm yet fair and above all objective grading system."

"As a teacher, I would be sure the work was correct before the student handed it in (i.e. I would tend to help the student cheat!).

"All parts of test should be taken in one place."

"This would not make the test secure. There is not any way you could prevent teacher bias."

"If the test is state administered there would probably be no 'political' or 'friend' pressure as there would be on a local (friend) administrator."

"Not enough control."

"May not be valid."

"The differences in marking a test from person to person would be great. Marking should be left to one specific group of people. Administering it at local level - does this mean test sites or learning centers?"

"Should be all in one to prevent person from taking a test at two different times. They could be turned off the first time & never retrun to take the second test."

"I feel the ability to write a simple paragraph is a somewhat pressure situation is important and doing it during the test services this purpose."

"Too much room for grade interpretative reporting!"

"Lack of funds."

"How do you intend to enforce the administration at the local level."

Comments from those not responding:

"Can see this presents problems for setting up a norm or standard - I'm interested."

"Standardization is important and may be a problem with subjective scoring at local level. I'd reserve my opinion for further information."

"Is this within our scope to answer?"

"This would probably be the best way if it was done at all. Please don't use the local testing center - we have enough problems now. As an instructor, I couldn't correct if for I would not be objective."

"If its forms & applications it could be administered with rest of test. If a writing sample - prior."

"Not sure."

Question #4:

Should reading passages selected for the test be drawn from materials published for general adult public consumption?

_______ yes _______ no _______ no response

Comments from those responding yes:

"Newspaper articles."

"Everyday reading material such as recipes, contracts, and newspaper material."

"Magazine articles, newspaper news and feature articles, recipes, 'how-to-articles, light, modern fiction, reading of forms, etc."

"Current event magazines. Local newspapers."

"Consumer education. General reading of ad's, banking literature, etc."

"Newspapers, comics, magazines, labels, material on packages, Bible."

"Newspapers, magazines."

"Newspaper articles, job applications, current events of last 10 yrs."

"Since I am a math teacher, I am not entirely too sure about this one!"

"Editorials, newspaper, government forms."

"Magazines, e.g. Time, Business World, etc. Newspapers. Social community booklets, planned parents, AAA, etc."

"Newspapers, magazines - only if edited prior to testing because papers, magazines etc. can be notorious for mistakes in grammar, sentence structure, etc."

"But not in entirety."

"Newspapers, magazines."

"Government printings, newspapers, popular books, popular magazines."

"Editorials from 'good' newspapers. Articles from Newsweek, Time, etc. Directions for assembling articles commonly purchased for use in home or office. Directions for using sophisticated appliances."

"Newsweek, Time, national newspapers."

"As stated before - I believe the test should be as relevent as possible. Materials selected should be of the average adult reading level."

"To familiarize people/students with test objectivity so that subject performance can be handled."

"Newspaper; legal documents; literature; science; and social studies."

"Materials that relevant to daily life."

"Current newspaper articles' current materials in consumer reports; current materials in introductory information to contracts, etc."

"Popular magazines; consumer material; government publications; trade magazines; home improvement materials (interior/exterior); nutrition material; popular fiction."

"Magazines, newspapers."

"Testees would feel more relaxed reading familiar materials."

"Time magazine; Federal tax form instructions; apartment leases; credit card bills."

"Also literature, poetry, prose, fiction, non-fiction, historical, scientific and general news."

"Newspapers; magazines; encyclopedias, labels on medicines; foods; cleaning products, etc. College book tests."

"But some information regarding government & citizenship probably should be included."

"Newspapers, magazines- relevant readings not so much in the technical sciences or social studies which for many, are never read or used."

Comments from those responding no:

"But should be similar to what adults encounter in everyday life."

"Subject matter should reflect what a high school senior is expected to know. Take expected knowledge passages - work - from each of academic - general- vocational- clerical."

"The majority of the passages should be from general sources, however for diagnostic purposes poetry, technical reading, government forms should be included."

"Materials, ie.e newspapers written only on 5th grade level!"

Comments from those not responding:

"Newspapers; magazine articles; passages based on everyday social problems, i.e., alcoholism, marriage, etc."

"There should be a variety, i.e., materials for general public as well as more abstract reading (test words in context, etc.)"

"Very fuzzy! Again, are we intent on reducing everyone to a common level. Shouldn't the G.E.D. diploma mean something above a general practical knowledge."

"Edited samples only."

PART D: Additional Comments

"I agree philosophically and therefore, support the consideration of this project. It is, of course too early to give total support to exact proposal until refined."

"This test will not only give my segment of the population a certificate but also teach them the skills they will need to assume a new life style. The testing for diagnosis will allow them to see what they know as well as what they do not know. Did you ever consider this as a way to allow h.s. grads to find any weaknesses they have which may be holding them back, e.g. math, reading.

"Modification of presently used materials seems more appropriate than spend all that money on a new test when there are already four other alternatives."

"Personally I think with the money so tight right now-- spend it on the programs - not a 'reinvention of the wheel.'"

"I have several serious concerns about this type of test: (1) Who will make the value judgments as to what adults should be proficient in and to what degree? (2) Are students going to be surveyed as to what skills they think the test should measure? (3) The idea of a writing sample seems good, but it now takes almost a month to get GED scores from Trenton - won't the writing sample take even longer to correct? (4) We have all worked long and hard to make the present GED diploma as valid or more valid than the traditional high school diploma. Will colleges, employers, labor unions, etc. accept this type of high school diploma? (5) I find a serious problem with one of your basic premises - that the present GED is easier for recent drop-outs than for older adults. My older students always pass the GED with some basic skills review - they have lived long enough to accumulate the discrete knowledge they need. High school drop-outs, expecially minority ones, are lacking in both basic skills and discrete knowledge. Most of them learned little in their high school years and have an appalling lack of knowledge of basic history, government, geography, science, etc. I'd like to know if my experiences are that different from other GED instructors."

"I have serious reservations about an alternative test being accepted in business, colleges, trade schools and other states. Would the test result in an equivalency diploma, without the distinction being made as to which test was taken? If so, the only confusion might be for the student - which test to take."

"Be sure that in any proposed changes of a test, the value of it can be lowered. The test should be prepared in order that it be a desired goal to reach and earn - not be an idiot test that any adult can pass, if they could read on a 6th grade level."

"Why reinvent the wheel? More emphasis should be placed on fine-tuning current GED tests and making these more applicable to student needs."

"I believe students of age 16 should be able to take the G.E.D. if they are ready for it without a waiver. Why should age interfere with education and getting ahead in life."

"1. Some point of differientation must be made between the 'adult' and 'mature adult' GED student. Age/years out of school/both or some other criteria. 2. Are there enough materials available immediately as generating materials usually takes three years. 3. Will the criterion-referenced material be prepared on a state wide basis or a local basis? 4. Will adult educators be adequately oriented/trained/supported through out a criterion-referenced program? 5. Have real problems with the alternate test being also a diagnostic tool. 6. What is the Degrees of Reading Power Test and the Primary Trait Scoring Method?"

"I seriously question the need for an alternative test. I don't like the fact that many discrete items are tested in the current GED and this penalizes the older adult student. However, most students want the high school diploma for its credentialing purposes. The current GED does tell an employer, community college, or 4 year college that a person can perform at a certain level. If NJ had an alternative test what would it tell employers or post-secondary institutions? As you know New York State did a comparison of the ACT test based on the APL study against the GED. Of those who passed the GED, 95% of them scored at the Level III on the APL. Granted both tests measure reading & math ability - what would the alternative test measure? Is the measuring of writing & decision making skills enough to necessitate the development of a new test? Also, from reading Griffith, I'm sure you are aware of the controversy as to what are adult proficiences. You cite under criteria 4 of ecological validity the impact of basic public health requirements vs. playing card games. Who is to say that to some segments of our society card playing (numbers playing, etc) is not of significant value. You have developed an interesting idea - I just hope you are not whistling in the wind."

"1. Have preparatory centers submit corrected writing subtest at time of actual test. 2. If an adult is not part of a pre-GED program, that person should be asked to report to a preparatory center for a writing test prior to the actual test. This should cause minor inconvenience if adult centers are local."

"I have not made up my own mind, whether the present GED is sufficient or whether an alternative test based on your notions of naturalistic inquiry have merit. I am more concerned about the practical effect of having two tests available to the adult seeking a diploma. It has taken a long time for the present GED diploma to be accepted as a reasonable alternative to a regular high school education. What will be the effect of yet another test? I don't doubt your scholarship or your ability to put together a viable and reasonable alternative test, but I question the need. The non-traditional adult high school program provides all that you propose in your philosophy statement, with much more flexibility than any test. Thank you for the opportunity to speak out on this problem."

"The suggested 'Composite List of Mathematical Skills' would be a more suitable measure of adult education. The problem of an adult continuing onto college could be dealt with via the present GED test, with the adult taking it whenever the college decision has been made."

"I am very much in favor of what you are proposing. This new test is realistic."

"Test should be given at each learning center at least once each year."

"I feel that the current GED math test is not a good indicator of an adult's mathematical ability. The test is too work problem oriented with very little computation. At least half the test should be straight computation with the other half concentrating on applied (everyday living) problem solving. I don't feel that the test should necessarily be made easier. I just feel that the content and format should be changed."

"I would support a new state test, but before I can I must be assured that other states will honor it."

"Tests should be made relevant. However, don't forget that now in NJ the students in day school will have to meet minimum proficiency requirements for all required courses in addition to passing the MBST. A drop-out should not just the given an exam and, if passed, awarded a GED. If this is the case, then the present GED exams should remain. Standards are important. Let's not stress minimum and lower our expectations. There is more to a high school diploma than minimum basic skills."

"Your questionnaire seems biased. So many of these are leading questions."

"If relevance of the GED is an issue than the present test is probably not relevant for most adults. The question I have is in the 'holistic approach.' It does not seem holistic but rather a rehash of the basic skills philosophy I agree with an alternate test but would like to see it provide a more diversified format and flexibility of content. I realize the limitations inherent in the GED programs and perhaps a more encompassing GED is impossible but it would probably be more accurate to say the GED would become a basic skills (3 R's) diploma."

Appendix E

Vocational-Technical Schools
Admissions Policy Survey

Question #1.

Is a high school diploma or its equivalent required for admission to your Post-Secondary/Adult Program?

______yes*   ______no   ______does not apply

Programs noted by respondents which require a high school diploma:

Aviation Mechanics
Beauty Culture
Dental Assisting
Licensed Practical Nursing

* One school responded that a high school diploma is required for all of its post-secondary/adult programs.

Question #2.

Do you accept high school equivalency certificates or diplomas earned through taking the GED test?

from New Jersey   ______yes   ______no

from other states   ______yes   ______no

no response   ______

---

22 institutions were sent questionnaires

______ have responded as ______

Question #3.

Do you accept high school equivalency certificates or diplomas earned through life experience or other non-traditional means?

from New Jersey ______yes ______no

from other states ______yes ______no

no response ______

Question #4.

New Jersey is considering the development of an alternative test of high school equivalency which will require that adults demonstrate proficiency in reading, writing, and math skills used in common adult life situations. Assuming the (1) it could be demonstrated that passing the alternative test was at least as difficult as passing the GED, and (2) that the student met all other admission requirements, would an equivalency certificate issued on this basis be acceptable for admission?

______yes ______no ______no response

Additional Comments:

"We offer to serve high school students and adults in a variety of ways and will modify certain requirements to satisfy individual condition."

"It would seem that the completion of the practical nurse program should qualify one for a GED under plan 2."

"I am not in a position to state yes or no by just what is asked in this questionnaire. More information is needed. More information would have to be obtained and evaluated in terms of test validity and reliability. I feel that the GED, as it is, does measure/assess students' knowledge adequately."

"There has been considerable discussion of making another alternative to the GED tests in many meetings. From these I have the opinion that the alternative would only be accepted in NJ. We run an Adult High School which issues a High School Diploma and is an alternative to the GED. I really do not think another method is needed."

Appendix F

Higher Education
Admissions Policy Survey

Question #1.

Is a high school diploma or its equivalent required for matriculation?

________yes

________no

Question #2.

Do you accept high school equivalency certificates or diplomas earned through taking the GED test?

from New Jersey ______yes ______no

from other states ______*yes ______no

no response ______

*comments: "if all else is in order (i.e., transfer student with good college record)."

"providing scores are equivalent to NJ minimum."

Question #3.

Do you accept high school equivalency certificates or diplomas earned through life experience or other non-traditional means?

from New Jersey ______yes ______no

from other states ______yes ______no

no response _____*

*comment: "not familiar with any examples"

---

30 colleges and universities were sent questionnaires

_______ have responded as of ________

Question #4.

New Jersey is considering the development of an alternative test of high school equivalency which will require that adults demonstrate proficiency in reading, writing, and math skills used in common adult life situations. Assuming the (1) it could be demonstrated that passing the alternative test was at least as difficult as passing the GED, and (2) that the student met all other admissions requirements, would an equivalency certificate issued on this basis be acceptable for admission?

______yes ______no ______no response

Comments:

"Acceptable if approved by State Dept. of Education."

"Doubtful unless other evidence of ability (i.e., college work completed elsewhere). In your words, the alternative test 'would place less emphasis on the more abstract skills. . . .' an evaluation of precisely this kind of ability is what we need to make."

"The alternative test would need the prior approval of the VP for Academic Affairs, to whom the Admissions Office reports. We also would require a copy of the proficiency test scores, if they were to be reported as scores."

". . . Perhaps an option might even be to have two types of GED's. One for students who have been able to demonstrate knowledge of a more esoteric nature and one for students who have general knowledge of the type you proposed in this alternate examination. In this way, the integrity of both would be preserved and your goal of awarding equivalency diplomas to those who are not interested in more abstract learning can still be served."

"Your proposed test is acceptable provided the student is awarded the NJ High School Equivalency Certificate."

"Because of our admissions requirements applicants must have strong backgrounds in mathematics and science. While we accept an equivalency certificate, it in itself is not enough for admission."

"An equivalency certificate based on the alternate tests would be considered, however, as equivalent to a non-academic high school program. As such, it would make it more difficult for the student to meet admission's requirements."

"I would be concerned about the skills which this alternative test would measure. Would these skills be those needed for success in college?"

Appendix G

EXAMPLE 1

For The Record

Tomorrow is the last call for voters to switch parties for the June primary.

According to state law, anyone who has ever voted in a primary election—and has therefore designated an affiliation with either the Democratic or the Republican party—must file a declaration of party change with his municipal clerk or county election board 50 days before a __(1)__ if he wishes to switch __(2)__.

We've always objected to this law because it requires declared voters to decide whether to stay put or switch 10 days before the filing deadline for candidates; it deliberately discourages voters from changing sides because they have to do it before they know whether all the __(3)__ have taken the field.

We still don't like the law, but this year we have to concede it can't possibly create a hardship for voters. In the major primary contest, for gubernatorial __(4)__, there are already so many candidates in both parties that nobody ought to have to change parties to find somebody to vote for.

The thing that discourages voters this year is trying to figure who all those people are and why they're running for __(5)__. But that's another story—and another state law.

A primary
B parties
C candidates
D nominations
E Governor
F Senator
G Election
H Votes
I Candidate
J Voters

EXAMPLE 2

Cancer-Causing Chemicals Found in 16% of Wells Tested

The state Department of (1) Protection tested 667 groundwater wells in New Jersey the past two years and found that 16 percent contained some cancer-causing chemicals.

The DEP's Office of Cancer and Toxic Substances Research conducted the study which is to be released in detail on Tuesday.

Officials said they took 1,118 samples from 670 wells throughout the state and found that "more than 95 percent can be considered acceptable for potable use."

Only 31 were found to be (2) to a serious degree. Those wells have since been closed down.

The study, which is part of the DEP's program to determine environmental concentrations of cancer-causing agents in the state, found that one or more of eight volatile organic compounds were found at (3) above 10 parts per billion in 16.6 percent of the tested wells. Those chemical concentrations were considered safe for drinking water, officials said.

Five of the eight chemicals—carbon tetrachloride, chloroform, dichloroethane, tetrachloethylene and trichloroethylene—have been recognized as cancer-causing (4).

In three precent of the wells tested, concentrations of one or more of the eight chemicals exceeded 100 parts per billion, "a clearly unacceptable level," the DEP said.

Concentrations of metals and pesticides were found to be problems in up to 30 wells, officials said.

With few exceptions, metals appear to present a less serious health problem than organic compounds found in the groundwaters, according to the DEP.

Dr.Robert Tucker, chief of the toxic substances research group, said the state's groundwater system is volnerable to chemical pollution.

The (5) of New Jersey's ground water systems makes it imperative for New Jersey to keep monitoring detectable chemical levels so that any problems may be detected quickly and corrected," Tucker said....

A. vulnerability

B. Health

C. contaminated

D. metals

E. solution

F. agents

G. level

H. concentrations

I. vulnerable

J. Environmental

Appendix H

Primary Trait Scoring Guide Package

A partial scoring guide package is presented below. It is missing only the final section, i.e., sample papers and discussin of assigned grades, since these can only be obtained through field testing the exercise.

The Exercise: Giving Directions

Test-takers are presented with a simple road map and the following directions:

> Directions: Look carefully at the map. Pretend that you live at Main Street, which is marked with an "X" on the map. There is a doctor at the hospital on Elm Street (marked with "H") who needs to come to your house. Write a short note giving him the directions he will need to get there.
>
> The Primary Trait: Clarity and completeness of directions.
>
> Rationale: The writing should be judged according to whether or not, given only the note and the map, the reader would be able to get from the hospital to the house on Main Street.
>
> > Clarity refers to the format in which the information is presented. Are the directions provided in the proper sequence? Is the writing clear enought to understand the directions? (Note: Missing steps are a matter of completeness, not clarity.)
> >
> > Competeness refers to the inclusion of all necessary information. Are there steps missing? Do the directions take you the entire distance from the hospital to the house?
> >
> > Note: The exercise is designed to measure writing, not map reading. The writing should be judged successful even if the shortest or best route is not indicated.

Scoring Guide

ENTIRE EXERCISE

0	No response; fragment
1	Scorable
2	Illegible or illiterate
3	Does not refer to the map at all

CLARITY

1	Clear writing in proper sequence
2	Proper sequence; unclear writing
3	Clear writing; improper sequence
4	Improper sequence; unclear writing

COMPLETENESS

1	All necessary information is provided
2	Impossible to follow directions; information missing